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LECTURES ON PHRENOLOGY,

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LECTURE XVI.

26.—COLOUR.

GENTLEMEN:—We are now about to speak of the faculty of colour, discovered by GALL, and admitted by all phrenologists. It is situated in the middle of the eyebrow, at the most elevated part of the superciliary ridge, between *resistance* and *order*. I have shown you the convolution on the model; I shall now show you its application on the skull. Remark how the eyebrow may be modified by it, in two ways; either the middle portion may be elevated into the form of an angle, or it may be pushed forward, which latter renders the eyebrow prominent.

Function and Primitive Impulsion.—Its function is to distinguish all the shades of colour. A sentiment of pleasure is attached to this perception. Add to this a sentiment of the harmony and contrasts of colours. That is the primitive faculty, as is proved by the negative state of the function coinciding with a depression of the organ, which causes the person to confound all colours. I found it difficult to believe this observation, but I have since proved it. Metaphysicians have not explained these differences, nor did they imagine that there was a primitive faculty there.

Applications.—Its applications interest us the most. The faculty is particularly applied to painting, causing us to observe with pleasure the assortment of colours. Thus, decorators, and all passionate amateurs of colours, make use of it. Here, then, is a great question. It is one thing to perceive colours. To seize the different shades with exactitude is a part of the same phenomenon, carried to the highest degree. But is it the same faculty to represent them by painting? Is it the manual address, concurring with the choice of the colours, which produces those paintings which are so remarkable for the beauty of the colouring? No; the first idea is what *I* have adopted, or, rather, which has been taught me. When in my youth I took lessons in drawing and painting, I said to myself that I wrote very badly,—that I was by no means adroit in forming the lines of writing or drawing. The master replid, "That is no matter: there are many drawers and painters who write very badly, and yet who are exceedingly clever in their art." I have had many opportunities of verifying this observation, so that the art of painting has no relation with manual address, nor with the sentiment of spaces and the weight of bodies, nor with the art of tracing lines. We may write very badly, and yet be very clever in the art of colouring. Yet drawing is necessary in order to have a fine picture; so are order and symmetry; but these two qualities depend upon different organs, and it is these which render painters good or bad. Consequently, then, faculties which assist colour are independent of it.

The faculty of colour,—is it completed by imitation? That is another resource. It would be necessary to prove that all good colourists have the organ of imitation. No phrenologist has yet thought of verifying this, which proves that it has not been observed. I conclude, then, that the faculty of imitation is not the source of dexterity in colouring.

There are, then, in this faculty of well-assorting and retracing colours, two things,—1st, The faculty of perceiving them clearly; 2nd, An influence of this faculty over the muscular movements: in fact, it is with the hand that we draw. This is one of the difficulties which I gave you an idea of in the last lecture, in which we were occupied with general considerations on the receptive faculties. It is then a work to be done. We must distinguish between the faculty of appreciating colours and that of drawing them. There is a re-action of this faculty upon the muscular system, which produces a dexterity in placing colours. I cannot go any further with this question.

Sex.—It has been remarked that women often possess this faculty in a very high degree; but they rarely excel in drawing.

All the great models, in point of design and distribution of groups, are to be found in the paintings made by men.

Auxiliaries.—The question of "auxiliaries" does not relate to the faculty, as you may readily imagine—for it has not any auxiliaries—but to the profession of the painter, of decorator, or whatever other name you may give. The art of painting negatives the aid of a number of organs. Order, space, imitation, are the principal which assist it. Afterwards come imagination, which animates the productions of art; judgment, which prevents it falling into digressions; comparison, &c. To produce master-pieces, our faculties require the assistance, first, of faculties of the same order, and afterwards those of a higher order.

Antagonists.—I do not know of any; but the more powerful faculties frequently divert us from this one, which very much depends on education. There are persons born with the talent for painting and colouring, but who are diverted from it by their manner of living and their education. The faculty exists, but does not require a great development, in consequence of these obstacles.

Animals.—They have not this faculty accorded to them; but, Gentlemen, I am not of this way of thinking. You have seen the distinction which we have established. The sentiment of colours, of their vivacity, their assortment, the pleasure which results from them, and the faculty of imitating them, which does not belong to the general organ of imitation, but which appears to be a duplicate of the faculty of perceiving colours, a duplicate which re-acts upon the muscles. Well, then, animals are deprived of this second part of the faculty. But who can assure us that they are not sensible to colours? I had a proof of it that was quite unexpected. I had two little dogs that belonged to a very intelligent breed. They never entered the house, but were kept in a court-yard at some distance from it. They entered it by accident, and the imagination of the animals was struck with the colour of the carpet. I conclude that they perceive colours. How can I conclude otherwise? They became restless; they smelt, touched, and compared these coloured representations with the different colours they had seen in the court-yard, where there are very few. Why, then, refuse to animals the sentiment of colour? I am persuaded that they possess it. Besides, insects that live on flowers can only distinguish them at a distance by their colour, for they have not any olfactory organ. It is, then, by its colour that the butterfly and the bee recognize the flowers from which they gather the pollen, the honey, the wax, &c. There is no doubt, then, that animals possess the sentiment of colour, but they have not the faculty which we have of reproducing it by means of painting. In my general considerations I explained to you this idea. I return to it at present in order that we may not lose anything; it is a subject of observation which will not be lost sight of.

Examples.—Here are busts of the heads of painters; the middle part of the eyebrow projects forward. I told you that there were two physical manifestations of the organ; one in the augmentation of the arch, and another in the projection forwards. This painter, who has the latter projection, is a historical painter, because, no doubt, he possesses the necessary organ for it; in fact, here is the organ of events, which we are going to study. That confirms what I have already said, that the organ is applied to the faculties which predominate.

Here is Girodet, who may be offered as a negative example; in fact, the organ is not prominent; I am glad to see that. What distinguished this celebrated painter was the perfection of his drawing, the organ of which is well developed.

Among colourists we have as examples, Correggio, Titian, Teniers, Claude Lorraine, Rembrandt, whose talent as a colourist is known to every one. Rubens is also well known; Van-Dyck, Poussin, Lesseur, Lebrun, Raphael, Michael Angelo, and others. In some the talent of colouring is doubtful, but there is a list sufficiently long to enable you to arrive at the truth. I could also adduce as examples females whose talent as colourists is known.

27.—Locality.

We pass to the organ of Locality. It was discovered by Gall; its existence has been proved by the phrenologists; philosophers had not turned their attention to it. I have told you how they were pre-occupied by the idea of a being which was placed in the brain, who possessed all the faculties. The faculty of locality was discovered by the observation of the senses; by empirical observation, which the psychologists despise, which they treat with disdain. Gall observed that there were persons who recollected perfectly their way, who preserved in their memory the image of a tree, and a street or window which they encountered in their route; in a word, who recollected well the localities—who having been once in a certain place found their way to it again without any difficulty, whilst the unfortunate man was continually losing his, though he had the faculty of observation, the genius of bringing circumstances together, and of causality, which surpassed all the little faculties.

Situation.—We speak of No. 27. It is situated in the anterior and inferior part of the forehead, on either side of the median line; the two organs touch each other. There are two convolutions which correspond with them, and which are separated by the falx,

above the crista-Galli; they are to be found in all brains, though more or less folded. Here is the organ in the interior and middle part of the forehead; the two organs are separated by a little hollow at their extremities; and externally they form two eminences which are continued a little above the inner part of the brow; the organ is placed below the frontal sinuses. I give myself as an example, for the sinuses being very much developed in me, you will be able to see the place of this organ; but having subtracted the projection of the frontal sinus, the organ is small in me. Recollect that I told you that the internal face of the frontal bone does not project outwardly on the external plate, but is continuous with the part of the bone above and below the sinus. The relations of the organ are, above those of form and distance, below eventuality and time, because it is prolonged on either side.

First Action.—Gall said it was the faculty of recollecting the places that we have been in; I believe that there is more in it than that; that there is not only recollection of each object, but that a picture, or image, of the place remains in the mind. You can easily imagine that it is secondary to the organ of vision. Blind men have no idea of locality. The faculty of recognising supposes the individual strongly affected by the perception of the places in which he has been. If he has paid any attention, the impression remains strongly imprinted; but when the organ is very much developed, the image of the place remains without the person having paid particular attention to the objects, in order to recognise them; it is what we observe in animals, an admirable example, to which I shall return immediately.

Applications.—One has a tendency to travel; he who feels much pleasure by reason of this faculty, tries to procure himself this sort of enjoyment. Thus, the organ inspires the taste for travelling, unless it be counteracted by other faculties. Others incline to topography, to geography; you understand the reason. Others, to painting and astronomy, which becomes easier if you retain the picture of the stars in your mind, that brilliant spectacle of the night; it is not seized on by every one with the same facility, nor retained with the same power. To landscape painting, above all, it is applied. Phrenologists, who are attentive to every thing, have observed that landscape painters have this part very much developed. To military genius, also to the command of armies, it is of use. Judge of the service this organ must be to a general-in-chief, who recollects well the places he has passed through, particularly when assisted by geographical charts. He foresees all the movements of the enemy, for he sees all the ground which may be occupied by him with advantage. This organ has also been remarked in good chess players. Without doubt other faculties concur, but it is the cause of their peculiar superiority.

Examples.—Christopher Columbus is given us as an example of this faculty; we have not even his picture here,—Mungo Park, an English traveller, whose history I have read with a great deal of pleasure,—Francois, the poet, whom you all know,—Humbolt, the famous traveller and naturalist, whom every one knows,—Galileo, who was so struck with the appearance of the stars, when first the telescope was discovered, and who changed entirely the theory of astronomy,—Tyco-brahe,—Descartes. In all these persons, or in their likenesses, phrenologists have remarked the organ that we describe.

Here is the bust of a librarian of Edinburgh, named Frazer, who was remarkable for the facility with which he recollected all the particularities of the place where he was employed; the place that each book occupied; he was very remarkable in this respect. You see the faculty upon his bust, and even the sinus is not developed. When the external plate is not raised up all at once, it is much easier to appreciate the volume of the organ, for then the enlargement belongs to it entirely. Here is Newton, whom it is sufficient to name; this part is very much developed in him, and the sinus is situated superiorly. Baron Zach, a famous astronomer, lately deceased, is also given as an example of this faculty. When the organ is developed, and there exists a sinus, that is also well marked. General Lamarque, a man remarkable for many faculties, has this part very well marked, so much so that it conceals all the other neighbouring organs. The bust of Napoleon is remarkable for many organs. What an immense space between the root of the nose and the ear; that announces that all the faculties of relation are very much developed in him. Here is the organ we are speaking of; it is very considerable. There are many others on the cast that we possess. I shall point them out to you. It was this part, where are situated the faculties of relation, which was remarkable in this great man.

Here is another man, Col. Bory de St. Vincent, remarkable for different talents. I shall also mention him as being remarkable for the purity of his language and extraordinary facility in speaking; but at present we are only speaking of the organ of locality, which is remarkably developed in him. It is useless to tell us that the sinus marks the organ. It is certain that when the part which is behind the sinus is well nourished, the sinus must project in proportion. Besides, the comparison must be made in children, who have not the sinus, and in persons who have it well marked, but who have not the organ. Then you will see the round-

ness which I showed you in the first of these models.

Here are examples of the reverse: Bishop GREGORIE was not remarkable for this faculty, and you see the organ is not developed. VOLTAIRE was not remarkable for localities, but for language, &c.; the eyes are projecting. We must keep all this in mind. Here is KREUTZER: KREUTZER was an able performer on the violin, who directed the orchestra of the opera for a long time. He was also distinguished for composition, consequently he has the organ of music well marked; but locality is at the minimum. The organ of tones is one of the easiest of proof. Examine this part raised up in a pyramidal form, above the external extremities of our organ, and the ciliary arches. I defy you to find a depression there, as in the place of our organ.

Animals.—It is in animals especially that this organ is remarkable. How would it be possible for them to recognize places if they did not possess it? That they have it is proved by facts. You all know that the dog, and the horse, frequently recollect the way better than their master. It is useless to insist further on this subject, but we must give you some physical details on the position of this organ in animals. All those that travel have the organ sufficiently strong to be recognized. We take this from M. VIMONT, to whose work we are obliged to recur, and it is with much pleasure we do so. It is most evident in birds, because they go over the most considerable spaces; but it is also to be observed in some quadrupeds that travel. M. VIMONT has met with it in birds, also in many quadrupeds, forming a projection below the crest of the coronal bone, which joins the orbital angle. He gives as examples among the quadrupeds, the squirrel, the cat, the leming, a sort of Norway rat, that travels in company, that descends into the plains in autumn in order to devastate, that knows the localities very well. The organ is well developed in dogs, horses, foxes, also in the ass and mule, that partake of one and the other. In horses it is so strong that many of them know their way perfectly well, and even their masters allow themselves to be conducted by them. How frequently do we see the lower orders either drunk or asleep, and allowing the horse to conduct them where he pleases; the master is quite sure that the horse will not make any mistake. If I dare give myself as an example, I could tell you that I had a father who sent me to execute his commissions into the country, in places where I never had been. He explained to me the route as far as the place that I was acquainted with, and added, "when you arrive there, loosen the reins of your horse, there are three or four roads, let him choose whichever he pleases;" by this means I never once missed the way. In Paris the horses, when left to themselves, always choose the street that leads to their home these are facts. There is, then, an impulsion which no one can deny, and which is pre-eminent in animals; they cannot reflect, and therefore it is necessary.

In birds M. VIMONT has remarked this organ situated externally to the sense he calls geometrical; and he observes that these together cause the middle of the arch of the orbit to project from the middle of the eyebrow to the nose. It is very visible in travelling birds. I saw him demonstrate this on seven or eight hundred skulls which were in his possession. In travelling birds we see the edge of the orbit round and pouting, while it is sharp in those birds that do not travel.

This disposition is to be observd in swallows, and all birds that have two homes, one for winter and the other for summer. M. VIMONT has established three divisions in speaking of travelling birds. He has examined the organ, 1st, In those that travel in a circumscribed way, as the pheasant, the partridge, and birds that do not travel far. 2nd, In those that travel between two contiguous places, according to the intensity of the winter, and return as soon as the season permits, such as the starling, the turtle-dove, the wood-pigeon, the thrush, &c., who escape more or less from the cold, and return as soon as possible. 3rd, In those that perform long distances, who pass part of the year in one region and the other in another region. The author distinguishes here—(A)—Summer birds: the swallow, the loup, the loris, the quail, &c.—(B)—Winter birds: the snipe, the wild duck, the widgeon, the crane, &c. It is remarkable that amongst all the heads of birds which he possesses, none possess the organ of the geometrical sense and locality so well marked as two ducks that were killed at the angle V, which those birds make in passing through the air.

Pigeons, which seem to hold a middle place amongst these birds, and whom one might be tempted to place amongst those that travel in a circumscribed way, but who can, in fact, return from a great distance, merit our serious attention. Speculators know that they may be carried a hundred leagues from their home, if they have young, and they will return to it.

This faculty has been observed in dogs that have been transported far from home. We have, as an example, the history of a dog whose master (a soldier) was killed in Russia, and who returned. There exists, then, a sentiment of localities; and you see that it exists without a special attention, that is to say, without the desire of retaining localities, also existing; and animals possess the faculty so strong that it leaves impressions which never can be effaced.

As animals, who are naturally travellers, quit the country at certain epochs, M. VIMONT says that it is the want of change of

climate and nourishment which solicits the action of this organ in them. Nevertheless, I have observed at Xerès, in the south of Andalusia, that the swallows left in the month of August, at which epoch the temperature is high, and insects most abundant. It is true that these birds arrive during the first days of February. This fact would lead us to believe that they have a limited time for their travelling, and that the influence of the organ of time has an important part to play; at all events, the birds know where they are going, the young follow, and when they have once seen the country, they do not forget it. That is so true that the swallow and tomtit build their nests in the same place as in the preceding year, which announces a coincidence of the organ of locality. These are admirable facts. Psycologists should have considered them, but they have confined them to physics and instinct, which is not explaining anything. In proportion as animals are travellers, so is the organ developed, according to M. Vimont. These notions were necessary, in order that this organ should not be confounded with the love of places.

Associations.—This faculty is associated with that of space, to conduct animals that travel far, and who have the ideas more enlarged than the animal that remains from its birth to its death in the same place, and it is also aided by the organ of resistance, as M. Vimont has judiciously remarked, in speaking of the efforts necessary in directing their flight. Finally, the sentiment of temperature, which is allied, perhaps, to touch, and the organ of alimentation, are also auxiliaries.

Pray attend to these curious facts, in order to be convinced that phrenology is not a futility, a dream, a mystification, as it has been proclaimed in many learned societies. However, we do not fear their objections. Let us examine another organ.

28.—Number.

It is the organ of number and calculation, according to Gall. In fact, it was Gall who discovered it. It is situated at the exterior extremity of the superciliary arch, at the termination of the eyebrow, from whence there results either a deficiency in the exterior extremity, or a projection of that extremity forwards, as I explained to you when on the organ of colours. In the brain, this organ corresponds with the inferior surface of the anterior lobe. There exists there a convolution, which is the seat of this organ. In the complete head you see it occupying the same position, a little behind the anterior part of the crest of the coronal bone, which limits the insertion of the temporal muscle, so that it is situated a little externally to the superciliary arch, where it produces two eminences, whether the eyebrow bends down below this eminence, or advances in order to circumscribe it. We must take care and distinguish this organ from that of tone, and from construction. Here is construction, No. 9; the organ is lower down. Order is in the brow, above the range of hair which constitutes it. Our organ is external to it.

Primitive Influence.—We must double our attention, Gentlemen. We are speaking of a very important faculty, about which psychologists have disputed a good deal. You cannot (unless you have read them) imagine what numbers of pages have been written about the faculty of time. I shall endeavour to sum up my ideas from these writings.

Primitive Faculty.—To distinguish numbers,—1, 2, 3, 4; to multiply them to an immense extent; to calculate, that is to say, to combine these numbers in different manners; to multiply them, divide them into groups, compare one with the other,—a prodigious faculty, but having for its base unity. In fact, we multiply any number up to ten, and we reduce these numbers to a complex unity, which we multiply as we did the simple unity, in order to make a third, which we multiply in the same manner, and thus go on to infinity. This faculty is, in fact, so prodigious in its results that philosophers and metaphysicians consider it as the highest degree of human intelligence. However, it is not so. It may be met with in feeble intelligence, as well as tone; and Gall is the first who remarked (having observed it in young persons and even in children) that it was altogether a special faculty, and not the result of the perfection of the intra-cerebral being, material or immaterial, called spirit, soul, sensorium commune, &c. He has thus destroyed the scaffolding of that psycology which must fall for ever before the immense discoveries of phrenologists. Moreover, it is a faculty depending on organs, and which is in proportion to their development. Gall observed an extreme degree of development of this faculty in children of 9, 10, and 12 years of age; not remarkable for great faculties, they resolved problems of pure arithmetic with the greatest facility, and without the aid of figures. When it concerned numbers only, these children were wonderful; but when reasoning, independent of calculation, was required of them, they answered as mere children. Thus, the organ is independent of all the faculties with which it may be associated.

Applications.—The first application of this faculty is to arithmetic, when the organ acts alone. One may be a good accountant, and yet stupid. There is nothing more clearly proved than that a great number of persons make large fortunes by merely making a rule not to spend what they procure by means of other faculties, although they may be incapable of reasoning on grave subjects; but if this faculty be aided by other high ones, we find geometry the result, which requires the

organ of space; astronomy, which requires that of locality, and all the higher parts of mathematics, in which calculation occupies a very low position. But here judgment and causality are required, in order to produce great geniuses, such as DESCARTES, PASCAL, LEIBNITZ, &c.

You see, Gentlemen, what we owe to the science of phrenology. Metaphysicians never would have thought of these distinctions, and the enemies of phrenology, with all their sarcasms, taken from observations which are badly proved, are very insignificant, if one compares their obscure theories with these grand considerations, whose origin lies in empirical observation.

Auxiliaries.—The auxiliaries of this faculty are artificial signs, furnished by the ruder senses. CORDILLAC has proved it; he practises arithmetic upon his fingers; and when you wish to instruct a blind person in the science, you give him marks, and cause him to count them. When once he has learned to count ten, he can count five hundred millions. You give written signs to the person who can see, and when once he has attached an idea to the signs of 100, 1000, 100,000, he will go as far as you please. We run the risk of being taxed with materialism, but I say that the sensitive perceptions form the only base of all the sciences.

Mathematics is founded upon matter, upon images, or, rather, the perceptions furnished by the sight and touch; for the word image can only be applied to the production of sight, upon which the faculty which multiplies, *ad infinitum*, exercises itself, aided by others, in order to produce all those prodigies whose names I have recalled to your mind. I do not pretend to teach you these truths, for the most of you know them as well as I do, but I wish to place them in relation with others. Material signs are obtained by sight and touch; without them, no mathematics, no geometry, no astronomy, can exist, but we have ignorance with all its stupidity. These are the principal auxiliaries, the indispensable auxiliaries. Next come the organs of comparison and circumspection, the high intellectual faculties, and, above all, comparison; all these are obliged to contribute, in order that the science, whose base is founded on calculation, may be able to take a high flight.

Antagonists.—The antagonist faculties are imagination, or ideality. The marvellous, music, all those faculties called theatrical, &c., because they cause vivid emotions. Remark well, that these little organs of the anterior part, which, nevertheless, are the most precious to man, do not cause strong impulse, except by exciting the great organs which form the cerebral mass. Thus, man is not guided by the intellectual faculties, as we shall show you presently. A man who has the organ we are speaking of, may cultivate it, if obliged by circumstances; for instance, if you shut him up by force in the Polytechnic School, and take from him all exterior impressions which would awaken imagination, ideality, poetry, he will study; but, leave him free, and he will obey the impulse which procures him pleasure. You will find very few exceptions to this fact, which is so general. Such is man.

Positive examples.—EULER, KEPLER, GASSENDI, and LAPLACE, are given, whose busts we possess; M. ARAGO, member of the institute; also, M. LIEBI. There are many others, but let us analyze the heads that we are acquainted with. Remark well the distinction which I have established,—mathematics the organ, all the rest additional. Well, here is a child of nine years old, solving all the problems of EUCLID, without having had education. There is the organ. What, then, do we not owe to GALL? who gave us the means of distinguishing between calculation and the faculties which are associated with it—which distinctions the psychologists and metaphysicians never would have found out. This child was a calculator, an arithmetician, making these calculations without the aid of a pen. See how the organ is developed; try and induce these objection-makers, these anti-phrenologic banterers, to reflect upon this one fact, before they declare their opinions in learned societies. A young country lad, a child who cannot read, solves the most difficult problems in arithmetic, by means of a little convolution of the brain! It is a fact, however, which they might have got acquainted with before they ventured to speak. Is it not curious to hear a learned doctor saying, in presence of a learned society, "I have not studied phrenology; but the good sense due to my *self*, to my perpetual personality, obliges me to reject it?" And the journals were not ashamed to represent this ignorant (in phrenology) as Hercules, who had conquered the Hydra of * * *

Here is NEWTON. The organ had for its auxiliary, this part which you see so much developed. It is superior intelligence, but what a pity we have not the entire head, in order to recognise the organ which caused him to comment on the APOCALYPSE! I now take up Baron ZACH, a famous physician, in whom you will find this part well developed, with many others, for it is always by the combination that we should judge. However, Gentlemen, we shall consecrate a lecture to the manner of studying the head; for they who make objections only think of the organ they are looking for, whose influence they contest.

Here is BRUNEL; he has the organ very strong. All this intellectual development is admirable. He was a superior man. I will engage you will not find that in the men who have figured on the scaffold, although we have plenty of them in our collections. Examine FRANKLIN, the admirable

Franklin; he is one of our finest examples; examine the projection of the forehead, and how the external extremity of the eyebrow is enlarged and pushed forward. Here is Herschel, the famous astronomer, who discovered a planet; all the apparatus of perception is developed. The organ of which we treat, is one of those in which phrenology triumphs the most. I am assured that a professor has said, "I have the organ, and yet I cannot calculate." For my part, I do not believe it. This assertion has for its basis something which I do not wish to examine; because the man is a very estimable one in other respects. In Napoleon, the organ is very well developed, but that of mechanism does not correspond with it. Here are the negative examples: they consist of villains covered with crime. Examine the depression of this entire region.

Animals.—Philosophers have refused the faculty of numeration to animals. The observations of George Leroi, "lieutenant des chapes," under the ancient dynasty, has has given us other ideas. Read the "Letters to a Physician of Nuremburg on the Instinct of Animals," a very interesting work, which I have read with a great deal of pleasure. Here are the observations which he has made; they were transferred to the "Encyclopædia," where I read them, before I consulted the work. The magpies are the scourge of sportsmen, because they destroy the eggs of the game; they are cunning birds and robbers, who, not being very brave, attack the eggs and the young; from this comes the eagerness of all sportsmen to destroy magpies. A man hid himself in a hut, near a tree where the nest of a magpie was built; the bird did not return until the man had departed. It was then said, "Let us hide two, one only shall quit the place, and the magpie, who cannot count, will come back to his nest." This did not succeed; the magpie counted the men; he did not come back until the second had quitted the hut. Three, and afterwards four, were posted on the two following days; the bird did not enter until the departure of the last, *i. e.*, of him who was to have fired at him; but, when the experiment was made with five men, the bird was disconcerted in his calculation; after the departure of the fourth, he entered the tree, not thinking of the fifth, who shot him at last.

We might make other experiments, in order to prove that, in fact, birds have a commencement of the organ. For my part, I announced to you my design on that point. I would wish to see those animals raised in the scale, that some persons try to depress, in order to separate themselves entirely from animality! I do not approve of that; we should give every one his own, even animals. Animals have a trace of the organ of calculation; I am pursuaded of it. I have not more striking examples to offer you at this moment; I announce to you only my convictions.

29.—Order.

The organ of order belongs to Spurzheim. Gall admitted the faculty without assigning to it a place, or at least his genius taught him that this organ ought to exist. But a man cannot observe everything, however long his life may be. Its situation is the superciliary arch, between calculation and colour, below tone. The projection of this organ passes the level of the eyebrow, being well developed.

Influence or Primitive Impulsion.—Methodical arrangements, symmetry of objects. There exists in this arrangement a pleasure, unknown to those who do not possess the organ sufficiently developed. There is a pleasure in contemplating things in order, and even delight, for many persons. Disorderly people can form no idea of it. This is another observation due to empiricism,—to the study of man in relation to external objects, by means of his sensitive organs,—an observation which has not been made either by philosophers, or by those who substitute logic for observation.

Application.—To the arrangement of all physical objects. This is the basis of the faculty. It is found in all professions which require its aid, from the cook to the amateur of natural history; in the decorator, the painter, the architect,—all those who arrange objects, who put them in order. It is symmetry which delights the persons who possess this organ; whereas those who have it not are insensible to it. Now, let us find out its application, in a moral point of view. Philosophy and oratory form means of application. The regular and symmetrical arrangement of arguments depends upon it. It does not give the faculty of reasoning, but that of disposing the proofs and motives in such a manner that each thing comes in its proper time. The impressions are not confounded, nor is the discourse confused. The influence of the organ may be perceived even in phrases. Writers who have not order, keep together in a confused manner substantives and adjectives, sometimes where there is a connection between them, at other times where there is none, mingling and confounding ideas in such a manner that in the end we do not know what they have said. No doubt logic is the basis of the talent of writing well, particularly prose; but it is not sufficient to cause a writer to arrive at that high degree of perfection and simplicity by which he makes you forget the phrase, and only shows the matter, adorned with all the interest and charm which it can inspire. Ideality and the faculty of language exercise a great influence in eloquence; but order is necessary, in order to arrive at perfection. In poetry, the application of order

is of equal importance, whether the poet treats of a lofty subject, or not. In both cases he must associate order with harmony, in order to render the subject agreeable to the reader. In a word, it is the same in all kinds of literature; but as we have already spoken of order in treating of ideality, we need not enter into further details.

Some of you ask me, Why do you apply order to literature, eloquence, and poetry, which have nothing in common with physical objects? This objection, Gentlemen, will not stop me. The course is not terminated. If it were, there would be sufficient reason for the question. But I could answer it, even had I but one lecture more to give. In the meantime, recollect that all the signs of language reduce themselves to material objects, which the organs of perception have taught us. In order to speak, you must have words, which are sounds or signs. Well, it is to that that I apply order and symmetry. For example, in my lecture there are marks, and lines, and words, in small quantities; but the ideas attached to them are as numerous as it is possible to be. Write down your ideas; you must have material signs for that purpose, and these signs are either words, or visible signs that the eye can seize upon, or, for the blind man, objects which he can touch one after the other. They are all material signs, and order must preside at their arrangement. Order, then, will pass from material signs to ideas, to notions, to sentiments, to judgments, which you would wish to transmit to your hearers or readers. Besides, if you do not seize my idea to-day, you will not fail to do so, for I will return to it. I attach great importance to it, in order that we may not lose ourselves in the clouds, or in those pretended spiritual essentialities, which do not signify anything; for the spiritual in all these is a negation, and a negation has not any value. Thus, order may be applied to to the superior sciences, as well as to the physical ones. What I tell is new, and the assertion is bold; nevertheless, I assert it because I believe it to be true; but we have said sufficient upon the application of order on the productions of intelligence. If I were to retrograde, in order to recall to your minds any omissions, I should embarrass you, and should myself act contrary to the laws of this organ, whose importance I am trying to impress upon your minds.

Order renders the moral conduct methodical and regular. There are men who never do anything without order and symmetry; when this is in an extreme degree, they are called pedants, insignificant persons, &c., because the organ is not modified by the higher faculties.

Auxiliaries and Antagonists.—This organ has for auxiliaries, and constructiveness, with which it associates easily, the organs of comparison and circumspection; these are the principal auxiliaries that it calls to its assistance, and with which it acts in concert; for antagonists, it has all the theatrical faculties,—imagination, ideality, gaiety, and all the violent and disturbing passions of the posterior and lateral parts, which at all times upset our intellectual operations.

Examples.—Napoleon is a striking one; he had the organ remarkably developed; he had, in fact, a remarkable order; he had, also, locality, space, extent, calculation, and with them a high degree of intelligence, by which he was able to distribute his army to the greatest advantage; to these he joined an excellent judgment; thus, when he arrived at the supreme power, he substituted a perfectly regular administration for the disorder which reigned in France. There is Franklin, who also has the organ developed in a high degree; he regulated the American republic,—a man of method and order. He and Napoleon are the best examples we possess.

Here, again, is the librarian Frazer, who possessed locality. He, also, had order in a high degree. What a head for a librarian! Locality, order, dimension, and space, are very easily verified; it is sufficient to look at it. Brunel is cited as an example. In fact, all the faculties are developed in this Frenchman, who astonishes all England by his immense works.

Orators we also possess. It was less for order than for imagination that Foy was remarkable. But here are Manuel and Benjamin Constant, who excelled in argument. Desormeaux was a professor in the Faculty of Medicine, exceedingly methodical in his conduct and discourse, measuring and regulating his phrases. There is no depression; the region where the organ is placed is developed, but the high intellectual faculties are superior.

If you wish for examples of an opposite kind, take the greater part of criminals. But let us first examine the bust of Dupuytren, a fine example of all the high faculties. He had not that of calculation; that is, calculation in small matters; as for money, he did not lose it for a moment, not even in his last hour. Ulbach, the assassin of the shepherdess of Jori, did not possess this organ. I could cite fools as negative examples, and there are plenty of them. Martin has not the organ predominant.

Animals.—M. Vimont gives them this organ, and he makes it concur with construction in forming their nests. He pretends that there is a tendency in birds to build their nests in a regular manner. We must not judge too precipitately; the thing is very probable, if the organ be developed; but it is an induction; that is to say, we derive the probability of the existence of the faculty in animals that build their nests, from the predominance of that part of their brain which in man corresponds with order. He

believes that spiders make use of this faculty in the construction of their webs; it is a question which I shall not examine. He also thinks that the instinct which causes aquatic birds to smooth down their feathers is owing to this faculty; so that we should also attribute to it cleanliness. For example, the care that the cat takes to conceal its ordure; the attention that horses pay always to depose their excrement in the same place, as if they knew that by acting otherwise they would render the pasture unfit for their nourishment; for it is a fact, that horses never eat the grass which has grown around their excrement, although they will eat that which grows around the excrement of cows. I have been brought up in the country, and have observed all this without intention. As we cannot bring forward intelligence in order to explain this attention on the part of horses, we must attribute it to an instinct of which our organ is the instrument.

There is another impulsion, which causes the cow to eat the after-birth of its calf; another, which causes the bird to throw out of its nest the ordure of its little ones, and to go themselves to a certain distance to deposit their own. This precaution only exists in birds with regard to their nests. Must we attribute to the same organ the repugnance of man for these things? I do not know. The sentiment of disgust, upon which phrenology has not sufficiently disserted, is a very remarkable thing. There are men and women to whom nothing is repugnant; who touch and look at all kinds of ordure, wounds, ulcers, &c.; others whose stomachs turn at the sight of every thing disgusting; others who vomit if they imagine that they have swallowed a hair, an insect, anything which inspires them with disgust. A common saying is, "They have the stomach of sensibility;" but the stomach is only excited by the brain in this case. The question then is this,—Whether the sentiment of disgust, as well as that of cleanliness, depends on the organ of order or of any other? Certain persons have a horror of mice and rats, others of spiders, others of reptiles, &c. We have seen in Paris a Prussian officer who could not see old women, a cat, or a sewing thimble, without falling into convulsions. In physiology they call it idiosyncracy, but this word does not explain anything. We have to determine whether these dislikes depend on an organ, and what is the organ. It is only by observation that we can solve this question. For my part I am not sufficiently rich in facts to pronounce upon these questions. You know that I promised to communicate to you my doubts as well as my convictions.

PARTURITION OF A MALE CHILD AND A BLIGHTED FŒTUS.

To the Editor of THE LANCET.

SIR:—Cases similar to the following, I believe, seldom occur, though some are recorded.

On the 28th of May last, I was called to attend Mrs. G., who was just taken in labour. Her age was about 30 years, and she was the mother of two children. Shortly after my arrival, a large, healthy child was born, and the uterine efforts continued very severe, but the placenta was not expelled. After waiting a short time, I passed my finger along the cord to the uterus, when I discovered a soft mass, not unlike distended membranes, protruding from it. During a strong pain, I made slight extension on the cord, when the placenta, together with the mass, immediately came away. On examining the latter, I found it to consist of a small male fœtus, about five inches in length, surrounded by about three ounces of fluid. The integument of the fœtus was softened, and presented just such an appearance as might be expected from long maceration; it did not give off any unusual odour. On turning to Burns' "Midwifery," page 168, I find the following observations on the subject:—

"In the human subject, only one ovum is generally impregnated by one seminal application, but sometimes two or more may be carried down into the uterus, and even after one ovum has reached the uterus, and grown to a certain degree within it, we find that it is possible for a second to be excited into action, and brought down into the womb, where it is nourished and supported; but it is not yet ascertained what the greatest interval between the two conceptions may be. It appears to be ascertained that a woman may not only bear two living children of different ages, or of different colours, but also, that when a child dies in utero, it may be retained, and a new conception occur."

In a note, the following case is quoted:—

"Percy mentions the case of a woman whose child in utero seems to have become blighted, after motion had been perceived. At the end of seven weeks, from this time, she felt anew the incipient symptoms of pregnancy, and went on to the full time from the second date, when she bore a child, small, but lively. After the placenta had come away, a mass was expelled, in the midst of which was found a female fœtus, corresponding in size with one of the fourth month, the period at which motion had ceased to be felt in the first instance."—(*Rec. Med.*, p. 129.) On enquiry, I could merely learn that my patient expected to be confined at least three months before the event occurred. I am, Sir, yours, respectfully,

L. OWEN FOX.

Broughton, Stockbridge, Hants, Sep. 7th.

ON THE TREATMENT
OF
INFLAMMATORY DISEASES.

By HENRY SEARLE, *Esq., Surgeon, Kennington.*

ACUTE inflammation in the human frame is considered to be as alarming an occurrence as a conflagration in a house. It is true, that if the fever be not subdued it may prove destructive to life; and, as though inflammation would spread as rapidly as flames, a host of means is all at once employed to overpower it. Blood is abstracted in quantity according to the boldness of the practitioner; aqueous liquors are plentifully supplied; while food, being deemed of an inflammatory tendency, is rigidly withheld. If these means prove insufficient to control the inflammation in one day, they are repeated on the next, with some additions, such as local bleeding, blistering, &c. When the patient survives this treatment, which is by no means always the case, the constitution will often have sustained as much damage as a house which has been on fire, and, the flames being extinguished, requires several months to repair it.

It might be enquired, whether a trial of so desperate a practice would be made, if it were now, for the first time, proposed for the consideration of the profession? Would not a thousand objections to it be raised? Would it not be denounced as an outrageous attack upon an invalid? Would not even the legality of the means be questioned, which, consisting in the abstraction of large quantities of blood, the withholding of every kind of nutriment, &c., would, in a few days, reduce a hale-looking man to an almost lifeless being? It is repeated, that if such a mode of treating inflammation were for the first time introduced in this enlightened age, it would be treated with deserved contempt, for the remedies would be justly held as worse than the disease. Yet this system prevails at this very time, and to raise a voice against it is deemed folly, if not madness. Although every case of inflammation is not treated with this severity, yet there are daily many patients who are subjected to this practice.

Desperate means can only be sanctioned in cases in which serious results are apprehended; but does the antiphlogistic system of treatment obviate such results? Those only who have pursued both this system of treatment and that which is opposed to it, can give the answer to this question, which is, That the antiphlogistic system often destroys life when the disease would not, and even when life is preserved, a serious injury is often inflicted upon the constitution. If the amputation of a limb be considered necessary for the removal of a disease, although there shall not be the least probability of danger attending the operation, nor a doubt as to its expediency, yet the most eminent surgeons hold a consultation to confirm its propriety; while the strict antiphlogistic system of treatment, which is always injurious, and always of fatal tendency, is resorted to with little or no hesitation, and sometimes wantonly, even where inflammation does not exist. Why are such severe means employed on such slender grounds? Because inflammation, like fever, is a bugbear, and the most distant prospect of its occurrence is a sufficient inducement in the minds of some persons to oppose to it a host of violent measures; and although the remedies are tenfold more terrific than the disease, the disease, in their apprehensions, is tenfold more to be dreaded than the tendency of such measures.

This appeal to the profession is made in an urgent strain; and ought it to be otherwise, whilst the antiphlogistic system of treatment is so generally prevalent, and fraught, as it would appear, with such mischievous tendencies?

If Hippocrates were to revisit the earth, and see the myriads at this time, in England, under the antiphlogistic treatment, he would, in witnessing its effects, naturally enquire, "What are the rules of treatment in inflammatory diseases?" And when he heard of nothing but the antiphlogistic system, what a lament would he offer for mankind, that twenty-two centuries should have produced, in the chief department of medical practice, nothing better than a rule without a reason!

In the following pages are proposed rules of practice founded in science, in reason, and in nature; rules which will, for the most part, render the treatment of inflammatory diseases simple and easy; which will preserve both the lives and constitutions of those afflicted with this class of diseases.

In describing the treatment of inflammatory diseases, my object is rather to point out the proper rules of treatment than to detail the remedies.

The treatment is usually divided into the "constitutional" and the "local;" but this division is very objectionable, since it merely arranges the means to be applied into two classes, general and topical, without involving thereby any principle or rule of practice. It is, therefore, proposed to substitute for the "constitutional treatment," the *treatment of the constitution;* and for the "local treatment," the *treatment of the local disease*. By this slight alteration in the heads of treatment, the objects in applying the means are fully distinguished. The usual "constitutional treatment" refers to those general means employed to influence the inflamed part through the medium of the constitution; but the treatment of the constitution will be confined to those measures which will, without reference to the local inflammation, either prevent or subdue the constitutional disturbance, inflammatory fever. The usual "local treatment" is restricted to topical agents merely; but the treatment of the local disease will include all remedies, whether topical or general, which bear reference to, and are curative of, the local disease, inflammation.

THE TREATMENT OF THE CONSTITUTION.

In the treatment of inflammation it is very desirable to *prevent* the accession of inflammatory fever, and should it already exist, it is of paramount importance to *subdue* it as speedily as possible.

To prevent the Accession of Pyrexia.—It having been shown, when treating, in a former essay,* on the nature of inflammatory fever, that its predisposing cause is either a reduced, or a low grade of, muscular power, it follows, consistently with that view, that those depletory means which considerably diminish this power should be carefully avoided, whilst the diet of the patient, instead of being, as is usually recommended, almost devoid of nutriment, should be nutritious without being unnecessarily stimulating, not essentially differing from the accustomed diet, whenever it has been moderate, and sufficient to maintain a fair degree of muscular tone. Should it, however, have been too abstemious, and should the patient appear exceedingly delicate, a more nutritious, though light diet, should be adopted. On the other hand, should the patient have been in the habit of indulging too freely in fermented liquors, he should be permitted to take about half his usual allowance.

Whenever vomiting or nausea attends an inflammatory disease, it forms an obstacle to this method of preventing the accession of fever; means should, therefore, be immediately taken for its removal. An irritable condition of the stomach may arise from several causes, the chief of which are,—sympathy with the inflamed organ, the presence of bile or of some indigestible substance, and inflammation of its mucous membrane. In the first case, two or three doses of calomel and opium, and soda-water, will allay the sympathetic irritation, attempts being at the same time made to subdue the inflammation itself. In the second case, an emetic and an aperient will be requisite. In the third, a mustard poultice, or a blister, should be applied to the præcordia, on the part which is painful under pressure, and a large dose of calomel should be administered.

By these means the irritability will, in general, become allayed, and the stomach will be enabled to receive mild nutritious food, the best forms of which are—arrow-root, or gruel, made partly with milk, to which a small quantity of brandy may sometimes be added—a caudle, composed of equal quantities of gruel and beer—and isinglass, boiled in milk. Broths are objectionable on account of the little nutriment they contain, and of the flatulence they occasion. This diet will soon prepare the stomach for more solid food.

Exercise, by maintaining the muscular tone, and thereby preserving the body from becoming irritable, is a salutary mode of preventing the occurrence of pyrexia. It can be had recourse to, in many cases, during the first, and often the latter, stages of internal inflammation, and in most cases of external inflammation in which the disease is not seated on the lower extremities, or on an extensive portion of the skin. Rest is very generally recommended in the treatment of inflammatory complaints; but that prejudice, rather than experience, dictates this means may be proved in all cases in which exercise can be taken without distressing the feelings of the patient.

By these means the strength and the healthy functions of the body will be considerably maintained; at the same time the nervous, and, consequently, the vascular and visceral irritability, so often allowed to complicate cases of phlegmasia which otherwise would be perfectly simple and manageable, will be obviated.

To *subdue* pyrexia is a less easy task than to prevent its occurrence. As inflammatory fever often depends as much upon the con-

* Lancet, Vol. I., No. 5.

tinual exciting cause—inflammation—as upon the predisposing cause—an irritable condition of body—it is clear that a *full* description of the treatment for the removal of the pyrexia cannot consistently be given under this head, part of it bearing reference to the local treatment. The constitutional management, however, can be here described so far as regards the predisposing cause.

The indication is to correct the irritability of frame, and as this condition of body depends upon reduced muscular power, an attempt should be made to restore that power. For this purpose measures should be adopted similar to those recommended for the prevention of fever, limited only by the disability of the patient to pursue them so fully. These means may be sometimes aided by those medicines which have a direct tendency to subdue vascular irritability.

Exercise, for obvious reasons, cannot be numbered among the remedies for pyrexia, although it is often used as a preventive. Fresh air should be obtained, by a free ventilation of the apartment. In aid of a cooling regimen the patient should lie on a horse-hair mattress, and without bed-curtains. Animal food, in the solid form, cannot in general be taken if the pyrexia be acute; but milk, whey, beer, wine and water, eggs, or good broth, can be taken in small quantities, and frequently. If nourishment be judiciously and fearlessly administered, the strength will gradually increase, while the irritability and consequent fever will proportionally diminish. This is so true that it is extraordinary that prejudice should so long have fostered the prevailing opinions respecting the nature of inflammatory fever, and that the plain, common-sense system of supporting the powers of the frame under disease should not have been long since universally adopted.

The *medicinal treatment* depends much upon the character of the inflammatory fever. If considerable pyrexia attend subacute inflammation, it is evident that the predisposing cause, excitability, is greater than the exciting cause, inflammation. Under these circumstances, febrifuge medicines, especially those of a sedative nature, as tartarised antimony, digitalis, &c., will in general produce a beneficial effect. But if, as in acute inflammation, the exciting cause play the greater part, then febrifuge medicines will avail but little. Sedative medicines would appear, *à priori*, to be indicated whenever the general circulation is inordinately increased; but very high and strong action of the arterial system cannot be controlled by sedative medicines, as tartarised antimony and digitalis; for small doses of these medicines have no effect, while large doses occasion vomitings, which are often distressing and injurious to inflamed organs, and unless they produce an uniform sedative effect, they are pernicious, as temporary depression of the circulation induces reaction, and thus defeats the object to be attained; and to nauseate the stomach without subduing the disease, is worse than useless, as it renders the patient incapable of taking that nutriment which of itself alone would, according to the views which have been already given of the nature of the inflammatory fever, tend to diminish the pyrexia.

The sedative agency of cold may be often employed advantageously, by placing the patient, who should at the same time be thinly clothed, in a current of cool air. No kind of danger need be apprehended from this exposure, unless the phlegmasia have originated from revulsion of blood occasioned by exposure to cold; then, indeed, to renew the original cause of the disease would be committing the folly of adding fuel to fire. In such cases calomel and opium, in combination, form an exceedingly useful sedative, producing a general and uniform effect; while they allay inordinate action, they maintain an equable distribution of blood; if they fail to induce sleep, they compose both mind and body; they alleviate delirium when it exists, and in other cases prevent its occurrence.

THE TREATMENT OF THE LOCAL DISEASE.

In the treatment of inflammation three indications suggest themselves, viz.—1st. *To remove the cause, or to counteract its agency.*—2nd. *To reduce the increased circulation of blood in the inflamed part.*—3rd. *To correct the derangement in the function of the secerning extremities of the vessels engaged in inflammation.*

The fulfilment of any one of these indications will often accomplish that of the rest; but some cases require that the three should be fulfilled together.

First.—To remove the cause, or counteract its agency.

Systematic writers on inflammatory diseases recommend the removal of the primary cause, but if that cease to exist, and the inflammation proceed under the excitement of secondary causes, they at once propose antiphlogistic measures of treatment, without further allusion to the primary cause, whereas the treatment should still bear reference to that cause. To ascertain the cause, and the manner in which it produced the disease, is to discover the particular organic susceptibility, and the sympathies, of the individual; for all persons are not influenced by the same agent. What better guide can the practitioner have to direct his course, while attempting to remove effects, than a correct knowledge of their causes; and in what other way can this knowledge be made available, but by employing those means which directly tend to counteract their agency? The attention of

the practitioner, therefore, should not be entirely engrossed on behalf of the effect; it should rather be directed to the removal or counter-agency of the causes. But does the strict antiphlogistic system of treatment provide for the removal or counter-agency of causes? No; it is empirical in the extreme; it treats all cases of acute inflammation on the same principle, as if they all arose from similar causes. It does not follow that the treatment should be the same, because the effect, inflammation, is the same; the treatment should be adapted to the cause, and as the nature of the cause varies, so should there be various modes of treatment. It is sometimes necessary to raise, and sometimes to depress, the circulation; but the antiphlogistic system always aims at reducing it. It is not, therefore, surprising that inflammatory diseases should be so often fatal under a system of treatment which does not recognise these important practical distinctions.

The most direct method of removing inflammation is suggested by observing the manner in which it was produced. For instance, if a local phlegmasia be brought on by excitement of the general circulation, the use of an agent which, like tartarised antimony, depresses the general circulation, is the most direct method of counteracting the agency of the cause, and, as it were, of undoing the disease; whilst sudorifics, warm baths, or such means as excite the circulation, would, by renewing the cause, tend to perpetuate the inflammation. Again, if inflammation of an internal organ be brought on by any considerable depression of the circulation, as when the surface and extremities of the body are exposed during several hours to wet and cold, instead of tartarized antimony and other depressants, sudorifics, warm baths, flannel clothing, and whatever excites the general circulation, and diverts the blood from the diseased organ, are decidedly indicated. Should such means be insufficient to restore the circulation throughout the body,—should the feet remain cold, for instance, which is often the case, a small blister or sinapism should be applied to each instep; and if the circulation be very languid, diffusible stimulants are indispensable; for a languid circulation, although not the primary, was the second in the chain of causes, and occasioned the central accumulation of blood which produced the inflammation, and now constitutes a perpetuating cause, maintaining the inflammation in spite of the remedial measures employed. Stimulants, therefore, by increasing the general circulation, whereby blood is conveyed into the extremities and outer surface of the body, reduce the circulation in the inflamed organ, and prove particularly curative. In illustration of this principle, the following familiar example may be offered:—

A person, after exposure to wet and cold, may feel indisposed, having symptoms of an internal phlegmasia coming on, and in order to remove the chilliness which accompanies this state, freely indulges in wine or spirits before going to bed. During the night, a febrile state of excitement comes on, which towards morning subsides, and he rises free from disease. In this manner a severe illness is often prevented.

By many this practice would be considered very dangerous; by some its propriety might be admitted at the commencement of an attack of inflammation; but that it should be adopted at a stage of confirmed inflammation would be allowed by scarcely any one, although it offers no violation to any law in medical science. It is, on the contrary, easy to show that it is strictly in accordance with one of the laws of the circulation, viz., that any one portion of the circulation is an antagonist power to the other portions. Accordingly, if one portion, in being excited, as in inflammation, be raised in action above the rest of the circulation so as to command an undue afflux of blood towards it, it is strictly consistent with science that every other part should be raised to the level of that in the inflamed organ, in order to counteract this local appropriation or accumulation of blood. To increase the general circulation, therefore, whenever it can be achieved, indirect counter-agency to the primary cause, is not only the most scientific, but often the only successful mode of practice; and those who make a proper distinction between a temporary general excitement, artificially produced, and the excitement of inflammatory fever, will at once admit its rationality; but those who make no such distinction will denounce this system of practice as Brunonian, and fallacious.

The foregoing rules of treatment are referable only to those cases of inflammation which originate from causes capable of being removed or counteracted,—causes which alone suggest the indications of cure; but other cases, in which the causes are transient, and no longer in operation, require a treatment suited to the nature and seat of the inflammation, and to the constitution, without particular reference to the primary cause.

As the causes of inflammation are very numerous and variable, and some are even of opposite natures, and as the treatment should in a great measure be regulated by our knowledge of them, they have been arranged in the following table under the separate heads of Continuous and Transient Causes; and with the view of proposing more appropriate rules of practice than have been hitherto adopted, to the respective Causes have been annexed the chief Indications of Treatment, and to these again is appended a column of Remedies, not by any means intended as a complete remedial system, but merely as illustrations of the rules proposed.

TABLE OF THE CAUSES AND TREATMENT OF INFLAMMATION.

Causes of Inflammation.	Indications of Treatment.	Remedies.
CONTINUOUS CAUSES.		
Warm and wet, after cold and dry weather.....	To counteract the stimulating influence of the increased heat, and the relaxing agency of the reduced pressure of the atmosphere.	Cold ablutions, astringent tonics, acids, &c.
Cold and wet, after hot and dry weather	To counteract the revulsion of blood, by increasing the circulation on the surface and in the extremities of the body.	Warm baths, blisters, sinapisms to the feet, sudorifics, and a warm regimen.
Suppression of habitual discharges	To restore the accustomed discharge, or to establish another.....	Emmenagogues, deobstruents, alkalies, blisters, issues, setons, &c.; if the case be urgent, venesection.
The contact of vitiated and acrid secretions.....	To correct the morbid function of the secerning vessels..... To soothe the organs or structures irritated.	The organs primarily in fault should be treated by leeches, counter-irritants, fomentations, and by medicines which will correct any particular functional error.
Sympathy with the deranged function, or other irritation of some distant organ.	To remove the disorder of the organ primarily in fault..... To soothe the part sympathetically affected.	Those secondarily affected should be soothed by fomentations, opiates, alkalies, demulcts, &c., according to the circumstances of the case.
TRANSIENT CAUSES.		
PARTIAL EXCITEMENT.—From mechanical violence the application of heat, of corrosive and vesicatory substances, stings, &c.; also, from the violent internal agency of medicines.	To select those means which are adapted to the nature and seat of the injury, and to the constitution, in the only rule in cases in which the causes and the effects are so varied that no indication common to all can be given.	Topical abstractions of blood, sedative and soothing applications, counter irritants, &c.
GENERAL EXCITEMENT.—From violent exertion in hot weather, mental excitements, spirituous potations, &c.	To depress the general circulation, even should it not exceed the natural standard.	Tartarized antimony and other sedative medicines, cold ablutions, and a cool regimen.
From sudden exposure to inordinate heat after cold.	To preserve a low temperature of body, if the inflammation be seated externally. If seated in the lungs, let the patient be subjected to external warmth, and to a cool air for respiration.	A cool regimen. Warm clothing, a cool atmosphere, expectorant medicines, leeches, &c.
PARTIAL, or GENERAL DEPRESSION.—From exposure of the feet, or other parts, or of the whole frame, to cold.	To restore the circulation in the extremities and surface of the body, and to produce a counter-excitement to the internal disease, by raising the general circulation above its natural standard.	Warm baths, warm clothing, blisters, sinapisms, sudorifics, and in some cases diffusible stimulant.

The second indication of treatment is to reduce the increased circulation of blood in the inflamed part.

Whenever the primary cause of the inflammation is unknown, and the treatment, in reference to it, cannot therefore be adopted, this indication is especially to be adhered to. The various modes of fulfilling it are either of a physical, or a medicinal nature, and consist of external and internal means.

The *external* means are for the most part topical. They consist of those which abstract blood from the inflamed part: as, the application of leeches, scarifications, &c.; of those which occasion a derivation of blood from the affected organ, as, exercise, dry cupping, blisters, sinapisms, fomentations, embrocations, and other counter irritants; and of those which produce a sedative influence upon the vessels engaged in the inflammatory action: as the application of ice, of saturnine, spirituous, and other refrigerating lotions, of laudanum, iodine, mercurial ointments, lunar caustic, &c. The restrictions under which these several means should be administered, are reserved for another occasion.

The *internal* means of reducing the circulation in any particular part, consist of those only which influence the general circulation, no medicine having been yet discovered, which will exert a specific agency upon any particular part. They affect the general circulation either by raising or depressing it; they are, therefore, of two classes, which, in their mode of operation, are opposed to each other; it is, then, important to distinguish the cases in which the one or the other of these principles should be enforced—whether the general circulation should be raised by stimulants, or depressed by sedative means. This distinction often depends upon the nature of the cause, as has been already described under the former indication of treatment. But, when the cause cannot be ascertained, the circulation should be raised in those cases in which it is exceedingly languid, and the inflammation is seated in any of the central organs of the body; for a languid circulation tends to produce an internal accumulation of blood, and thereby to support the inflammation; consequently, by raising the general circulation, the blood becomes again distributed throughout the body, to the relief of the internal phlegmasia.

The heart and lungs form exceptions to this rule; for although they be situated centrally, yet, while other organs receive only their proportional quantity, these transmit the entire volume of blood circulating through the body; consequently, any considerable depression of the general circulation must be felt in these organs, and must therefore tend to reduce inflammatory action in them.

The circulation should be depressed in those cases in which the inflammation is seated externally, and unattended by very high or very low vascular action, the external surface and extremities of the body being the first to be influenced by depressions of the circulation. Tartarized antimony, and other powerful sedatives, are therefore useful in inflammations of the eye, of the testis, and in many other cases of external inflammation; but not in those which are extensive, and, at the same time, of an acute character, for the vascular action is too vigorous to be permanently controlled by these means, and temporary depressions, as before stated, in general, induce subsequent violent paroxysms. On the other hand, when the circulation is very low, no benefit can be reasonably expected by depressing it still more, for the co-existence of inflammation with this condition of the circulation, renders it more than probable that the latter is a perpetuating cause of the former.

In cases of podagra, it is highly injudicious to attempt to produce a languid circulation, as it would tend to withdraw the blood which had accumulated in the extremities, and to produce a central plethora, and thus to transfer the gout from the foot to an internal organ, which is more frequently the stomach.

However much, in some cases, the general circumstances may suggest the propriety of attempting to subdue the inflammatory action by reducing the general circulation; yet, in very painful affections of the joints, of the eye, or of the head and jaw from a decayed tooth, it will seldom be found good practice. To employ any means which will reduce the muscular power, will heighten the sensibility of the frame—a condition favorable to the support of pain; and so long as the pain continues, inflammation subsists; in such cases, larger doses of opiates, and the promoting of the swelling of the soft parts around those which are hard and unyielding, are the most beneficial means which can be employed.

The third indication is to correct the functional derangement of the secerning vessels engaged in the inflammatory action.

Since the mischief attending inflammation almost entirely results from the morbid action of the secerning vessels, it is to be regretted that so little is known of the influence of medicines upon them. While this branch of the science of therapeutics is the most important, it is the most neglected, on account of the insurmountable difficulties experienced in investigations connected with the various and peculiar powers of the nervous system. Although the virtues of a numerous catalogue of medicines have been ascertained, they are established as mere facts. Their mysterious agency has not yet become in the slightest degree developed. Not only does the entire operation of a medi-

cine remain unknown, but that of each of its elements is a problem yet to be solved. It is a disputed point whether medicines directly influence the secretory functions through the medium of the nervous system, or whether their properties are conveyed by the blood to the organ to be acted upon; it is not known whether the circulation in the organ be encreased, diminished, or unaltered, or whether the agency of medicine be chemical, physical, or otherwise; and such is the alliance of action among certain organs of the body, that if the function of one be disturbed, that of another becomes deranged. The kidneys, for example, are affected by a disordered action of the liver, stomach, bowels, or skin; it is therefore questionable whether diuretics exert a direct power over the kidneys, or whether they influence some other viscus, the altered function of which induces the encreased function of the kidneys. And medicines which produce an immediate effect upon the stomach in occasioning nausea, affect the secretory functions of the lungs, kidneys, skin, and probably of other organs. These points of consideration might be greatly multiplied.

If then, a comprehensive enquiry were made into all the agencies, direct and indirect, of different medicines on each organ separately, and on so many collectively as act in harmony with, or dependently on, each other; and if a classified arrangement were made of all the organs and structures of the body influenced by medicines, and if all the elementary agencies, as they were observed, were placed under their respective heads; and if this extended field of enquiry were occupied by men well versed in anatomy, physiology, and chemistry, can there be a doubt that they would take such enlightened views of the multifarious operations of the several functions of the body, as would enable them to trace, in connected series, many of the agencies of medicines, and thereby develop a new branch of medical science, one that has not hitherto been sought on rational grounds? If the perfection of the medical art consists in supplying a remedy for every disease, or, in other words, in employing medicines which will correct every morbid function of the body, our present knowledge of medicine is truly humiliating.

In bringing forward the facts which are supposed to be established regarding the power of medicines over the secretory functions of the vessels in inflammation, it is necessary to premise, that it is probable there are no secerning vessels pertaining to the arteries, which are not liable to be involved in inflammatory action.

A distinction should be made between those structures of the body which are endowed with different secretory functions.

Some structures have a plurality of secerning functions, and, therefore, of vessels, and are consequently more liable to become engaged in inflammation than those which have but one. Every tissue has its interstitial depository, or nutrient arteries; but every gland, and each classified surface of the body has, in addition, its peculiar functional secerning vessels. Of the surfaces, which consist of the mucous, the serous, and the synovial membranes, and also of the skin, the mucous membrane is the chief structure upon which an attempt is made to subdue the inflammation by influencing its secerning vessels; and that of the lungs, when inflamed, is the most frequently treated on this principle. Expectorant medicines form a numerous class of therapeutic means, and are so diversified in their properties, that, if judiciously selected, they are seldom ineffective in cases of simple bronchitis.

Although inflammation of the mucous membrane of the lungs can be so readily controlled by medicines influencing its secerning vessels, yet very little can be accomplished in the treatment of inflammation of the mucous membrane of the alimentary canal on this principle. It is true that calomel, in large doses, will often subdue gastritis, and its immediate efficacy in controlling the copious secretion in cholera has, in many cases, been quite astonishing. Beyond these facts, nothing important has been established, and although all purgative medicines do influence the secretory vessels of this membrane, yet not one is efficacious in subduing inflammation. It is not, however, improbable that this failure may, in a great measure, be owing to the violence offered to the inflamed surface by the peristaltic action of the bowels which is, at the same time, induced. Ipecacuanha is renowned for its remedial influence in dysentery, but nothing certain relative to its agency is known.

In inflammation of the mucous membrane of the urinary passages, accompanied either by a purulent or an increased mucous secretion, several medicines have proved beneficial in their influence upon the secerning vessels engaged in the morbid action.

Hence it appears that different portions of the mucous membrane require, when diseased, distinctly different medicines, according, no doubt, as the several portions vary in structure.

With regard to the influence of medicines on the serous membranes when inflamed, mercury is the only agent which appears to exert any control over the diseased action—a remedy which is equally beneficial to all parts of these membranes, as might be expected when the simplicity and uniformity of their structure are considered.

The cutaneous surface, when not inflamed, is readily acted upon by a number of medicines; but when inflamed, no internal medicine, with the exceptions of mercury

and iodine, has been found to exert a direct influence upon the secerning vessels of the skin, and those are remedies in only two diseases, erysipelas and syphilitic eruptions, out of the immense variety of characters under which inflammation of the skin presents itself. There are, however, several external applications which appear to have an immediate power over the vessels which elaborate these diseases.

Several of the glands are functionally susceptible of the agency of particular medicines; but as inflammation more often attacks the parenchyma, these medicines are not calculated to subdue the inflammation. In hepatitis, mercury is a favourite remedy; but however useful it may be considered in hot climates, it is of doubtful efficacy in cold, and even in temperate countries. In nephritis, diuretics are allowed to be injurious. In inflammation of the brain, or of the spinal marrow, mercury is of great utility, and in many cases the only beneficial agent.

Inflammation, treated according to the rules just proposed, will be found, for the most part, simple and manageable. Simple, in being unaccompanied either by the inflammatory fever so often springing out of great and sudden privations of muscular power, or, by the various pains, from flatulence, which often so complicate the disease as to be mistaken for additional symptoms of inflammation, instead of the dyspepsia occasioned by the innutritious liquid diet which is pursued. Manageable, because it will seldom assume an acute character, but will yield to the comparatively mild means employed for its removal. Another advantage in the system of treatment proposed is, that the constitution scarcely ever suffers during an attack of inflammation—the patient does not require several weeks, months, or even years, for the restoration of the powers of his frame.

Difficulties will attend those cases in which the patients have an insuperable aversion to every kind of nutriment, in such cases the inflammation will, in general, be unaccompanied by pyrexia, and it is scarcely necessary to mention, that difficulties will occur in the management of exceedingly delicate and excitable frames, in which organic lesions have long existed; but there are circumstances equally unfavourable under any system of treatment.

PATHOLOGY OF FEVER AND MALIGNANT CHOLERA.

To the Editor of THE LANCET.

SIR:—The following observations are submitted to you for publication in the columns of your excellent periodical. I am, Sir, your very obedient servant,

JAMES GEORGE DAVEY, M.R.C.S., &c.

3, Mile End Terrace, Portsea,
Sept. 2, 1836.

The pathological investigation of the nervous system, considered abstractedly, is, we may presume, yet in its infancy. Its great abstruseness is calculated to engender obscurity of hypothesis and false deductions; but it may reasonably be expected that clearer views will ere long prevail on this subject. I think there is little doubt that it will eventually be discovered that the seat of many diseases which are at present referred to organs affected secondarily, are primarily and essentially confined to the nervous system, more especially to the ganglionic. This class of nerves contributes so materially to the performance of all the vital functions, and presides so completely over all those organic processes, both singly and collectively, which are essential to life, that it must of necessity occasionally labour under irregularity of action, and, oftener than is imagined, display in autopsic examinations serious organic lesions.

The grand object in medicine is to discover cause and effect. These understood, there is, generally speaking, little difficulty in therapeutic investigations. It is with some diffidence, yet, I trust, with reason, that I purpose to show that what Dr. Stevens supposes, and has taught us to regard, as the cause of cholera and fever, exists only as an effect; for if it were the blood that received the first contamination in those diseases, its usual appearances would be lost, and instead of disease being gradually developed, we observe it to be often sudden and severe, as in many cases of cholera, and some of fever. In these diseases more particularly, the circulating fluid is first greatly altered in its qualities, from a poison received, as Dr. Stevens believes, through the respiratory system. Secretion is then deranged as a consequence, and general functional disease results. That accomplished physician very ably refutes the doctrines of Clutterbuck and Broussais, justly remarking that they cannot both be right:—"If inflammation in any of the organs were in reality the cause of fever, the disease ought to be fatal in proportion to the violence of the local affection; but the very reverse of this is the case. Mere excitement can be easily reduced, and the inflammatory form of fever is decidedly the most easily cured, though in it the excitement is often so great that the organs are very liable to be injured, whilst the malignant form of fever is by far the most fatal, though in this the excitement is less, and the organs are seldom affected."

Amongst the effects of ligature or excision of the par vagum, we especially observe hurried and oppressed respiration, very evidently arising from a partial deprivation of nervous influence, giving rise to a limited suspension of those chemical changes within the pulmonary organs, which are so necessary to life. The same state of things exists in cholera, and other malignant dis-

cases. Dr. John Davy long ago ascertained that the expired air of persons labouring under cholera asphyxia contained very much less carbonic acid than it ought. Now, from the experiments of Dr. Stevens, it appears that acids, alkalies, electricity, and every thing which destroys the neutrality of the saline matter, causes the blood to assume a dark colour, and impoverishes it. I would ask, might not the retention of the unexpired carbonic acid, supposing it to be formed in the round of the oppressed circulation, destroy the neutrality of the saline matter, and decompose the physical properties of the blood? The fact of but a portion of the oxygen of our atmosphere being consumed by persons affected with cholera, would favour the same phenomenon, considering the matter in the light which is thrown upon it by Dr. Stevens. I can understand that if a diminished quantity of oxygen be appropriated in the pulmonary organs, a corresponding diminution of carbonic acid must be the result, and by this mode of reasoning we readily account for the lividity and coldness of the cutaneous surface and extremities, attendants on the first stage, or the accession, of the diseases mentioned; for be it understood, that Dr. Stevens attributes the source of animal heat to the chemical combination of the carbon of the nervous system with the oxygen of the arterial, obtained by inspiration taking place in the secerning vessels.

The circulation of diseased blood through the system, whether originating from primary suppressed nervous influence preventing the due chemical changes taking place during respiration, or from breathing an infected atmosphere, whereby the carbonic acid in the circulation is not removed, would produce a diseased action in all the vascular solids. Its deteriorated quality would impair the cerebral functions, and, after a time, suspend the heart's action. The cause of death in cholera and other fatal fevers is, first, then, owing to the operation of a poison on the ganglionic system of nerves, checking the whole of the vital functions; and, secondly, to an effect arising out of that cause, consisting in the discontinuance of the normal chemical changes in the lungs, thus producing blood which is unfit for the support of life.

In Mr. Twining's admirable illustrations of the more important diseases of Bengal, we read as follows, at page 383:—"In the assemblage of symptoms which constitutes the early stage of a sudden invasion of cholera, we observe evidence of the disorder, or a total cessation of the functions of those organs which are supplied with nerves from the great solar plexus. In those cases which tend to early collapse and coldness, the liver and kidneys cease to secrete as usual, the digestive powers are arrested, the mucous membrane of the stomach and intestines has its secretions altered, and the disorder of the respiratory function reminds us of the alliance of the healthy, as well as the diseased, actions of the lungs, with the digestive organs, through the influence of the nervous system generally, and more especially of the pneumo-gastric nerves." Now, in my own opinion, the disorder of the respiratory function is by no means so much the effect of sympathy, as of some morbid impression operating on the cardiac and pulmonic plexuses within the thorax, simultaneously with those ganglionic nerves which are seated within the abdomen. What appears to me greatly to corroborate the truth of this opinion (that the organic nervous system is primarily affected), is the very rapid accession of cholera which is so frequently observed, and the equally rapid termination in recovery, or in death, as the case may be. "In some instances," says the author before quoted, and now deceased, (whose kindness and good feeling shown towards me when in Bengal I take this opportunity of acknowledging), "recovery seems almost as sudden and complete as in cases of suspension of animation from submersion in water." And again—"The fatal termination of cholera in some of the most sudden cases, commencing with extreme collapse, seems to depend on the intensity of the efficient cause of the disease acting so powerfully on the nervous system as to produce total arrest of all vital energy, and death, as it were, by suspension of animation, a cessation of vital actions taking place with hardly any preliminary course of disease." When re-action takes place, if it be not too violent, recovery is often speedy; if it be otherwise, congestion and inflammation of one or more of the visceræ occur, and will often call for the cautious abstraction of blood. The interminable grades of distinction which are seen in fevers, would incline many to doubt the identity of their nature; but to the attentive observer it must appear evident that their several types and forms are to be viewed, not as varieties in kind, but merely in degree, this depending upon numberless causes, both accidental and acquired. Thus is fever, in the most extensive acceptation of the term, provided it be idiopathic, to be looked on as an assemblage of phenomona which indicate the existence of some morbid impression upon the animal economy, disturbing its vital equilibrium, if I may use the expression. Although intermittent fever embraces so peculiar a character, one so very unlike the other forms of fever, it must not, nevertheless, be supposed to have a different pathology. Each paroxysm of ague "is a complete febrile seizure, the successive and critical changes of which are insufficient, in most instances, for the restoration of health." The cause of this disease is the operation of some morbid impression upon the organic nervous system, for the temporary removal

of which nature successfully exerts herself, its return occurring after a definite period. I would ask, *en passant*, if this disease arose from deficient saline matter in the blood, whether bark would be likely to cure it? Of all the forms of fever, cholera is by far the most fatal and rapid in its course, producing death often in a few hours, and seldom lasting longer than three or four days. In autopsic examinations of such persons as have died in the low form of the disease, cases have been repeatedly met with. Two such have come within my own immediate knowledge, when, after the most diligent examination of all the textures, no lesion, or diseased appearance, could be found. Copland and Alison, when speaking of the pathology of fever, make similar statements, proving, therefore, in the words of the former physician, "That changes may take place in the nervous system sufficient to cause the most acute disease, or even to subvert life, without being so gross as to be demonstrable to our senses. The fact now stated is important, inasmuch as it most materially affects the question as to the nature of fever"—cholera.

It would appear, then, that the efficient agents of fever act primarily upon the organic nervous system, and are made evident by the parts or organs with which it is connected, being those first affected, as shown in the disordered states of the respiration, circulation, digestion, and secretion. The derangement of so many important functions is attended with many symptomatic disturbances, which tend to the entire disarrangement of the whole system. The inflammatory disorganizations which are so frequently seen in autopsic examinations of those who die from cholera and fever, are to be viewed as the results of a subsequent anormal action, effects of the first morbid impression, produced, probably, by an inordinate effort on the part of nature to throw off the offending agent.

It may appear wrong to some to class cholera amongst the febrile diseases. Twining and Alison have both recognised the identity of some of the worst forms of fever with this very virulent malady, and no observer can help noticing the analogy between the stage of collapse in cholera, and the cold stage of intermittent fevers. In both we have the suspended state of the vital functions, the coldness and lividity of surface, and the anxious and retracted countenance. The subsequent re-action in each is of the same febrile character, with occasional congestion of internal visceræ.

Many persons are in the habit of supposing cholera to be attended with invariable symptoms. Amongst these are vomiting and purging. I have often, during a temporary residence in Bengal, and other parts of the East, seen very unequivocal examples of the disease unattended with either of those symptoms. I have the notes of a case before me which occurred in China, in 1834, where the bowels were *obstinately constipated*, and required a purgative enema. "Such are the varieties," says Mr. Twining, "in this disease, that I could not mention any symptom which was not occasionally absent." The same varieties and anomalies occur in cholera as in fever, from the period of invasion to its termination, the only difference consisting in degree.

Future investigations will, I doubt not, dispel the obscurity which at present veils the pathology of cholera, than which no disease has more seriously engaged the attention of the profession, although it has been treated more empirically than any other. If its pathology be considered as identical with that of fever, much of the ambiguity of the latter must disappear.

IDENTITY OF SYPHILIS AND GONORRHŒA.

To the Editor of THE LANCET.

SIR:—Among all the topics which agitate the medical world, perhaps none is more frequent than the question of the identity or non-identity of these two diseases. The majority of the profession are of opinion that they are totally distinct, but there are many great names, more especially of army surgeons, among those who consider the diseases to be one and the same. The opinion I am about to offer, is a modification of that of Hunter. It is not my intention to enter minutely into the arguments and experiments, *pro* and *con*, which the respective followers of John Hunter and Benjamin Bell have adduced in support of their views. Indeed, they appear to very nearly balance each other, Hunter averring that he could produce chancre by inoculating gonorrhœal matter on an absorbent surface, like the glans penis, and gonorrhœa, by introducing chancrous matter into the urethra; while Bell as positively asserts that he failed in so doing, and so it was with their partisans, and one asseveration must balance the other. But the anti-Hunterians thought they adduced an unanswerable argument, when they said that the diseases *must* be distinct, because gonorrhœa could be cured without mercury, nay, was aggravated by it. But our present experience that most cases of genuine syphilis are curable without mercury, and that many are aggravated by its use, shows, I think, that this argument has no weight.

Then comes another great gun of the "Bell party." If these diseases were the same, they say, one would invariably produce the other in the same person. I do not deem this by any means a *consequitur*, for every surgeon knows that two men may

have connection with the same woman, and one be infected with syphilis, and the other with gonorrhœa, and, therefore, the causes which determined the production of the one and not the other, by connection, would still act in preventing it from taking place in the patient suffering from one of the diseases. Moreover, Mr. Bacot, in his work on syphilis, says something equivalent to his believing that a man cannot infect himself with gonorrhœal opthalmia from his own gonorrhœa. I have no experience to refer to on this point, and will therefore offer no opinion on it; but should this statement be correct, an additional argument is furnished why syphilitic sores should not produce gonorrhœa, and *vice versa*.

A more plausible theory on this question appears to be that of a plurality of diseases—the opinion of Mr. Carmichael of Dublin—gonorrhœa being one of the number, with its distinct secondary systoms, &c. Now, this, *à priori*, appears to explain away many difficulties, yet when we see the same woman giving these distinct diseases, with all their peculiar character of primary sore, secondary eruptions, &c., to different men, it is difficult to imagine that the unfortunate woman's vagina contained all these poisons in a distinct form, chance determining which should affect each individual. Mr. Eagle, I believe, attributes much to leucorrhœa, and that it does produce effects, to all intents and purposes, which are undistinguishable from clap and primary sores, none will deny. But there is one circumstance on which I ground my opinions, which I have never seen particularly alluded to, and that is, that a particular individual may have the most promiscuous connection, and yet invariably become infected with one particular form of disease and no other; some always acquire gonorrhœa, while others as constantly suffer from sores, though other men have been infected by the opposite disease from the same female. I know an individual who has had gonorrhœa about seventeen times, but who never had any primary sore or bubo. All this leads me to think, that whether in the state of chancreous or gonorrhœal discharge, the poison is essentially the same; that in the disease of absorption secondary symptoms are far more likely to occur than in the disease of secretion. I cannot say that the particular disease the patient is infected with, depends on his constitutional diathesis entirely, as perhaps most men at some period of their lives have had each disease, but I do think, that the particular disease depends on the patient's habit of body at the time; and that in very many cases this habit is constant. Consequently the same disease is always produced on those persons, and, in more common cases, the person is always more liable to one disease than the other. *Cæteris paribus*, I would suggest that people of a sanguineous habit are the more likely to become subjects of gonorrhœa, while the lymphatic temperament would be more favourable to syphilis. In the one the vigour and fulness of the cutaneous circulation shows that the secretory vessels possess full vital irritability, while the lymphatic habit will be more favorable to *absorption*.

In support of the opinion that there is only one disease, and that the habit of the person infected determines its character, I would argue, from analogy, that cold will sometimes produce inflammation of the schenderian membrane, extending into the frontal sinuses above, and into the larynx, trachea, and bronchial cells, producing *secretion;* or it may attack the fauces, the tonsils, the pharynx, &c., ending in purulent effusion; or, on the other hand, it may tend to ulceration of the larynx, the trachea, and the substance of the lungs, here producing *absorption;* and yet nobody avers that there are *distinct sorts of cold;* the *cause* may be single, but the effects numerous.

It is true that little good can accrue, in a practical point, from arguing the matter in the present day, because the question of the identity or non-identity of syphilis and gonorrhœa, does not involve that of the use of or abstinence from mercury; for however that remedy may be used in some venereal sores and secondary symptoms, yet I think we all agree, that "the man who gives mercury in gonorrhœa, ought to be flogged out of the profession." I remain, Sir, your constant reader.

GEORGE ALEX. COWPER, M.R.C.S.

LYNN SELF-SUPPORTING INSTITUTION.

To the Editor of THE LANCET.

SIR:—Soon after the establishment of this institution our plan was communicated to you, and you expressed your opinion of it in the following words:—"This is literally a self-supporting institution; and consequently is, what the dispensary of Mr. Smith of Southam is not. If the Poor Laws demand an adjunct, this contrivance of the practitioners of Lynn is possibly the best that could be devised. It may do much for the sick, but obviously can only bring increased anxiety and trouble, unrewarded, on the practitioner; hence the unalloyed benevolence of the scheme."

I have read your remarks on Mr. Whiting's letter, and as you have expressed a wish to be informed of the particular circumstances of this institution, I will furnish you therewith without the smallest reserve; for although neither this institution, or any other method yet adopted for giving medical attendance to the poor, can be considered adequately to remunerate the practitioner

yet our plan does so better than parish practice, either under the old or new system, and but for the accidental circumstance of so many family (in proportion to the individual) subscribers having been admitted, the remuneration would have been much greater; for you will observe, by the rules of the institution, that where there are children, a half-penny per week is the subscription; and even then never to exceed three pence per week for any family, however large, if the children are under 18 years of age.

In establishing this institution, the practitioners of Lynn were more anxious to provide efficient medical attendance for the lower classes, and to inspire them with a spirit of self-dependence, than to insure remuneration for the practitioner. To guard themselves, however, from unnecessary loss, they have not allowed any non-professional persons to interfere with the management of the institution; they have carefully excluded all persons who were able to pay for medical attendance in the regular way; and the result has been, that many individuals and families now pay for attendance and medicine who never paid any thing before. This circumstance, and the advantages attending a considerable town-population, have enabled our plan to remunerate the practitioners even beyond our expectations; and it will do the same in every other town of a certain population, provided strict attention be paid to these points.

You must not be misled by the great numbers who have received attendance, because the subscribers having the privilege of choosing their surgeon, and of applying for assistance for the most trifling ailments and accidents, they have not been slow in taking advantage of that privilege. Upon the whole, I believe that the medical gentlemen engaged in this excellent institution are quite satisfied with the reward they have met with for their trouble; and they have also the satisfaction of witnessing the good moral effect of this plan upon a population greatly demoralised by the vicious old dispensary system, which had for many years not only injured the private practitioners in this town by giving gratuitous attendance to persons well able to pay for themselves, but had acted as a premium for idleness and improvidence to the working classes.

In the year 1834, 2,104 members were admitted, including adults and children, and 1,895 tickets for attendance were issued.

Received as subscriptions	£191	19	4½
Received as donations	12	3	0
Interest allowed by our Banker	1	13	7
	205	15	11½
Expenses for management	30	13	11
To be divided among the practitioners	175	2	0½

In the year 1835, 1,862 members were admitted, and 1,822 tickets for attendance were issued.

Received as subscriptions	£192	15	5
Received as donations	7	5	0
Interest allowed by our Banker	1	14	3
	201	14	8
Expenses for management	18	18	6
To be divided among the practitioners	182	16	2

In the present year, the number of subscribers are increasing. Our rules and regulations, as well as our by-laws, I had, on a former occasion, the pleasure of sending you.

Although I perceive, with much regret, that you condemn Medical Clubs, and those kind of institutions in general, yet I have too much confidence in the honesty of your motives to doubt, for a moment, that your only object, as well as my own, is the establishment of truth, and the honour and advantage of the profession. I remain, Sir, your very obedient servant,

JOHN TWEEDALE, M.D.,
President of the Board of
Lynn, 4th Sept., 1836. Management.

P. S.—It will appear by the above statement, that the practitioners of Lynn contracted to attend, in the year 1834, 2,104 poor persons for £175 2s. 0½*d.*; and that, in 1835, they contracted to attend 1,862 persons for £182 16*s.* 2*d.*, a ratio of remuneration far above any parish attendance that I ever heard of.

REMARKS ON THE LETTER OF MR. WHITING.

To the Editor of THE LANCET.

SIR:—On perusing Mr. Whiting's letter in your number of 27th inst, relative to the petition lately presented to the House of Commons, and inserted in THE LANCET of the 13th, I could not but feel surprised, that in expressing his satisfaction at the contract system (which he adopted by engaging with *another Union*, after signing such petition), he should entirely omit to notice the main causes which gave rise to the petition, and to "the alarm then generally entertained," which he now states to have been "unnecessary."

The Docking Union comprises twenty-seven parishes belonging to Smithdon and Brothercross hundreds, seven in the hundred of Gallow, and two in Freebridge-Lynn, in all thirty-six, containing, according to the last census, a population of 15,368 persons. For the medical services, &c. in this Union, as stated in the petition, £200 per annum were offered, which averages about three pence per head per annum on the gross population.

Now, Mr. Whiting, in his letter, says, "that the calculation," &c., "with regard to the Docking Union was thought *at the time to be correct*;" and he further says, "that a short trial of three months convinced him that a permanent contract might be made with safety and advantage." Would not any one on reading this, wholly infer that Mr. W. had actually engaged in a contract with the Docking Union? Yet that is not the case. He has contracted for a division of the remainder of the hundred of Freebridge-Lynn, which forms a separate Union, and comprises a population of only 11,389, for which the salary offered and accepted is £240, bearing an average of rather more than *five pence* per head, being an excess of two-fifths as a remuneration above that of the Docking Union. Yet even this allowance Mr. W. himself informed me he decidedly refused, until certain explanatory conditions respecting midwifery, &c., were introduced in the agreement; while similar conditions were peremptorily evaded, and an unconditional acceptance of terms was required, without one single saving clause, up to the very day of appointing to one of the divisions of the Docking Union an adventuring medical man, who has become an inmate of a cottage in the parish in which I have resided for more than thirty years, supporting a family of twelve children, and contributing many hundred pounds towards the maintenance of the poor of the parish, as well as a fully equal amount to the exigencies of the state.

Whatever difference of opinion or feeling may exist between Mr. W. and myself respecting this new system, it is not greater than the hasty and unexplanatory arrangements of the Docking Board would excite in the mind of any person similarly situated to myself,—their rate of salary being notoriously below that of almost, if not quite, every other Union in the kingdom. But even here I can allow that some excuse may be admitted, when it is considered that this Union was the very first formed in these parts, and that the late worthy assistant-commissioner, Sir Edward Parry, at the opening meeting, at which I was present, after passing the most high-flown and no doubt sincere eulogia on the usefulness, respectability, and honourable station of the profession, which he "venerated, from several of his own relations being members" thereof, yet most positively asserted that "the entire collective duties of every department thereof throughout the whole Union could and ought to be most efficiently performed for *one hundred pounds per annum!*" I am, Sir, most respectfully, your obedient servant,

EDWARD MANDY.

East Rudham,
August 30th, 1836.

CHARING-CROSS HOSPITAL.

REPLY OF MR. ROBERTSON TO DR. SIGMOND.

To the Editor of THE LANCET.

SIR:—I know the value of your pages, and will not intrude too much on them on this occasion.

Dr. Sigmond promises to give in a future number the details of his statement before the recent Committee of Inquiry; I shall therefore abstain from saying more in reference to his remarks in your last number, than that, at the general meeting of the governors on the 1st of August last, when the special committee was appointed, he stated, "I have a great regard for all my colleagues—a great respect for Dr. Golding—and a great respect for the other officers as well."

He approved of the appointment of a special committee to investigate and decide upon the matters referred to, and hoped his friend, Mr. Pettigrew, would do the same.

In a note to me on the 2*d of July*, (the month before last,) he remarks:—"It gives me great pleasure to add my expression of the feeling the medical officers entertain towards Dr. Golding as the founder of our institution, which I hope may be a lasting monument of his perseverance and benevolence."

Whilst giving his evidence before the special committee still more recently, he remarked, that he should be happy, in addition to the sum he had already subscribed to a bust of Dr. Golding, to contribute still farther, towards placing it in marble.

These complimentary notices of the director since the 3d of May, when Dr. Sigmond became acquainted with the pecuniary transaction of Mr. Pettigrew, are rather at variance with his reflections for not being previously made the depository of that transaction, which, in his communication to THE LANCET, he states he himself had heard of two years before.

The coarse invectives against Dr. Golding in the pamphlet which has been circulated, require on this occasion no comment; their author, I conceive, must by this time regret them himself.

Respecting the committee, I beg to remark, that they were all governors and unexceptionable members. Mr. Pettigrew, who was present at their nomination, was at liberty, and, indeed, invited, to name whomsoever he pleased to be members of the committee. That gentleman, both personally and in writing, assured the committee during the inquiry, that he "*relied with confidence upon their decision.*"

To suppose that Dr. Golding feels towards Mr. Pettigrew or Dr. Sigmond any ill-will, would be supposing that which is known to be contrary to his disposition. His conduct towards those gentlemen had been uniformly kind and conciliatory, till they thought fit to assume the bearing they have adopted

towards him. He differs in many respects from them, and in none more than in his opinion of the pecuniary transaction which has been the subject of inquiry.

The intentions, also, which any gentleman might entertain of carrying a junction between King's College and the Hospital, and thereby attempting, as part of the medical staff of the latter, to float into professors' chairs, is not one which he could consistently encourage.

The report of the committee, after a long and patient investigation of all the matters brought before them, and the explanations made thereon, is at the Board Room of the Hospital for the perusal of the Governors; and I beg to add, that the wards and various departments of the institution are always open to those benevolent persons who may be disposed to inspect them, and form their own opinion of the hospital, and the efficiency of its arrangements. I am, Sir, your very obedient servant,

JOHN ROBERTSON.

313, Regent-street, Sep. 13, 1836.

MEDICAL WITNESSES ACT.

To the Editor of THE LANCET.

SIR:—When you obtained a seat in Parliament, it was asserted by many of your unscrupulous opponents, that you had become so fully merged in the ocean of general politics, that you would forget the interests of your profession, and neglect that journal which, from its first establishment, had been upheld by the warm support of the general practitioners of this kingdom. The first Bill which you introduced into parliament, and which you have carried successfully through both houses of the legislature, is a triumphant refutation of the ungenerous calumny. When your enemies, your bitterest enemies, admit that the Act is of great importance to the profession—when writers who, actuated by malice or envy, or influenced by hire, have continually directed the most infamous attacks against your private reputation,—admit that the new statute must confer immense advantages on the profession,—the intrinsic merits of the Act may be fairly estimated as of no ordinary value. As there must be numerous readers of THE LANCET, who do not see the *London Medical Gazette*, and the *Medical and Chirurgical Journal*, but who, at the same time, must have a tolerably correct notion of the shameful misrepresentations to which your labours and character have been subjected in the columns of the former of those publications, I hope that you will comply with a request from one of your earliest correspondents, by inserting in your columns the following extracts taken from leading articles in those periodicals:—

"THE MEDICAL WITNESSES BILL.—This "bill, which has just passed into a law, is "brief, but most important in regard to the "medical profession. All legally autho- "rised practitioners must now hold them- "selves in readiness, on being summoned "by the coroner, to give evidence at in- "quests, under a penalty of £5, should "they fail to appear. The fee for mere "attendance is one guinea. When a *post-* "*mortem* examination, with or without an "analysis of the contents of the stomach, is "required, two guineas; and the coroner "is to summon such evidence, at the "request of the majority of the jury, or "otherwise be liable to the consequences "of a dismeanour.

"We certainly think the profession is "under obligation to Mr. Wakley for this "bill; and no degree of rivalship shall ever, "we trust, prevent us from rendering "credit even to our bitterest political op- "ponent, when we think he has deserved "it."—*London Medical Gazette*, Aug. 20th.

"MEDICAL WITNESSES BILL.—A more im- "portant legislative enactment, concerning "the profession, has not been past for many "years; and it is to Mr. Wakley that medi- "cal men are indebted for this highly use- "ful measure. The members of the medical "profession have much to thank the "honourable member for Finsbury for, and "we have no doubt they will fully appre- "ciate his exertions on their behalf."—*London Medical and Surgical Journal*, Aug. 27.

Volumes of praise in other works would not be so conclusive of the merits of the new Act, as are these extorted admissions of your rivals, the enmity of one of whom has prompted him to carry his hostility within the sanctuary of your private life. But I have said enough. It is not in their admission, their humility, or even their degradation that you find your reward. The gratitude of the profession will furnish that.

A word, Sir, as to the amount of the fees of the new Act. Two of my brother practitioners, with whom I have been conversing on the subject, think that a guinea is too small a sum for attendance merely. Certainly it is not possible for me to state what was passing in your mind when you drew the Act; but I conjecture that you adopted the most judicious course for securing the fee of two guineas for every medical witness, in eight cases out of ten; for it must necessarily happen, within a very short period, that medical witnesses will not be summoned, unless a post-mortem examination is required; and in all such cases a sum of two guineas is awarded; and assuredly this will be considered not only a fair but a liberal remuneration. I remain, Sir, your faithful servant,

A TWENTY-FIVE YEARS' PRACTITIONER.

THE LANCET.

London, Saturday, September 17, 1836.

In the letter of Dr. J. TWEEDALE, inserted at page 868, on the LYNN "SELF-SUPPORTING INSTITUTION," the following paragraph has been quoted by the Doctor from THE LANCET of a former date :—

"This is literally a self-supporting insti-
"tution; and consequently is, what the Dis-
"pensary of Mr. SMITH of Southam is not.
"If the poor-laws demand an adjunct, this
"contrivance of the practitioners of Lynn is,
"possibly, the best that could be devised.
"It may do much for the sick, but, obvious-
"ly can only bring increased anxiety and
"trouble, unrewarded, on the practitioner;
"hence the unalloyed benevolence of the
"scheme."

We re-insert the above passage in this place with great pleasure, and it would afford us sincere satisfaction if we could bring before the reader, at one view, all that we have ever written on this subject. Doctor TWEEDALE is fully aware that the opinions just cited had reference to the *principle* on which the institution at Lynn was established, rather than to the details by means of which it was sought to carry out that principle into practical operation. The details, in fact, were not before us as they are now printed under the title of "RULES and REGULATIONS" of the institution. Undoubtedly that system of Medical Policy in our parishes makes some approach towards perfection which confers the whole authority of the management on the Medical Practitioners; and in which no attempt is made by insolent boards of guardians to coerce the necessitous poor into belonging to these establishments, or to compel the surgeons to attend on paupers at the "Farthing-Club" price, which has been promulgated by the Poor Law Commissioners and their willing agents. In the stupid, worthless, pernicious plan of the Southam projector, the powers of the management are bestowed on a set of "*honorary* subscribers," and the applicants fo relief are divided into three classes—the inferior being stigmatised as a "pauper" class, and, as such, subjected to continued degradation and insult. Foreseeing the evils which would inevitably arise from any general adoption of the Southam scheme, we exposed and denounced it from the moment when it first fell under our observation, and we have the gratification of knowing that our strictures have had their effect. Still, it must be confessed that the "Farthing Clubs" of the Poor Law Commissioners, that all the self-supporting projects, are the legitimate offspring of the Southamite evil. Evidence, therefore, of the mischievous and dangerous character of the proposal of ROBERT SMITH, is no longer wanting. The pestilence has penetrated deeply, and is felt extensively throughout all ranks of the profession, not yet,—it is true, in a pecuniary sense, but in the deadly attack which has been made by, and through, it upon the independence, utility, dignity, and integrity of the medical character. Why should it be denied that the members of our profession are at this moment placed by it under a system of the most painful and humiliating coercion? In many places surgeons have felt themselves called upon to enter into contracts of the most disgraceful description,—subversive at once of their own rights and dues, and of all the claims of humanity incidental to the distressed condition of the sick poor. They "felt themselves called upon," we say, to become parties to their own injury and dishonour. But the *necessity* under which they acted, partook more of fancy than of reality. Had surgeons sternly and sturdily maintained their ground—had they resisted the self-supporting frauds—had they repudiated the farthing clubs—had they, in a word, ACTED TOGETHER as a body of high-minded men, fully determined to support the respectability of their own character and the welfare of the poor, and, we may add, the best interests of the whole community, they might have defied the Poor Law Commissioners, smashed for ever the farthing-

club roguery, and rendered inert all the wild and silly projects of the conjuror of Southam. But the profession has been false to itself; there has been treachery in the camp; and, the advantages which the enemy has gained are the result of our *disunion*, that disunion having itself been caused, in many instances, by a mean and dirty spirit of avarice or rivalry. This confession, or acknowledgment, or whatever else it may be termed, is due to the cause of truth and to the vast importance of the subject which is now under consideration. We will not class Doctor TWEEDALE and his colleagues among the "traitors," but we must tell them frankly, that their proceedings are not the less mischievous because their intentions happen to be honest. On the contrary, the integrity of the promoters and supporters of the Lynn Institution is an aggravation of the evil. People feel no shame in following an example which has been set before them by honourable men. If Doctor TWEEDALE and the Surgeons of Lynn were a low-minded, sordid, disreputable body of individuals, their proceedings would not be deemed worthy of being imitated. Rather would precedents of their manufacture or invention be scouted by the majority of the profession. Now, however, things assume a far different aspect, as it is generally understood that amongst the eight medical officers of the Lynn Dispensary are to be found practitioners of eminence, ability, and character. An imitation of the conduct of such persons, taken *per se*, could not be regarded as disreputable, or be considered as likely to bring down upon the imitators the reproaches of their professional brethren.

This view of the question requires that we should refer to the items of account as they are detailed in the letter of Doctor TWEEDALE, and also to a few of the "Rules and Regulations" of the institution. As a postscript to his letter, the Doctor gives, somewhat exultingly, the following summary:—"It will appear by the above statement, "that the practitioners of Lynn contracted "to attend, in the year 1834—2,104 poor "persons for £175 2s. 0½d.; and that, in "1836, they contracted to attend 1,862 per-"sons for £182 16s. 2d., a ratio (*ratios*) of "remuneration far above any parish attend-"ance (*parochial remuneration*) that I have "ever heard of." The Doctor has been most unfortunate in his "hearings." However, to the account! What fact does that document disclose? What frightful fact does it develop to the profession? Why this,—that, taking the sum total for the two years (1834—35), and setting off the tickets issued for attendance, against the amount of receipts *actually divided* amongst the medical officers, the latter had contracted to attend, and really *did* attend, their patients, *and supplied them with medicines*, for a less pittance than TWO SHILLINGS A CASE! We must repeat the words,—At less than TWO SHILLINGS A CASE! And this is your "*successful*" institution, is it, Doctor TWEEDALE? Instead of taking the "summary" in the *postscript* to the Doctor's letter, we call upon the reader to examine the items in detail, when it will instantly appear that the medical officers were not paid *two shillings* for each case of disease which they treated. In the two years, the cases actually attended, according to the number of tickets issued, amounted to *three thousand seven hundred and seventeen*. The number of *shillings* (the calculation ought to be made in *farthings*, or *copper scrapings*) divided amongst these overpaid practitioners, amounted to only *seven thousand one hundred and fifty-eight*, having been two hundred and seventy-six shillings *short of* DOUBLE *the number of tickets actually delivered to the sick*. The payment, therefore, was *under* two shillings a case. What a picture of medical prosperity! Aye, and this is a "ratio of remuneration *far* above "any parish attendance that I have ever "heard of," says Doctor TWEEDALE! The Poor Law Commissioners will assuredly vote to the Doctor ten or twenty per cent. out of their enormous salaries. This Lynn affair, this "*successful*" self-supporter, is a perfect

God-send (a Satan-send?) to the evil geniuses of Somerset House. Who now shall accuse Boards of Guardians and Commissioners of injustice towards medical men? With whom lies the cruelty? For it is literally a fact that the Commissioners, in instances which we could name, allow to surgeons of Unions in this metropolis, more than *twice* the rate of payment which our brethren of Lynn ALLOW TO THEMSELVES! In one instance which we could practicularise, the surgeon is in the receipt of £150 per annum, for attending less than one thousand cases, close to his own residence; and that officer is scandalously underpaid. After the statement which has been put forth regarding the success of the Lynn concern, and of the ample remuneration of the medical officers belonging to that flourishing establishment, the rates of payment may undergo some revision, and the *extravagant* gentry of Somerset House may feel themselves called upon to cut down the high salaries of the medical officers of the Unions, in proportion to the *just* views and claims of the *one* physician, and *seven* surgeons, of the fortunate town of Lynn. But the Commissioners had better wait awhile, or they may act too hastily. The surgeons of the *self-supporter* will soon, probably, show what can be done in the way of making an economical reduction of the medical profits arising out of the exorbitant medical salaries awarded to them in their own beloved institution. That something of the kind may happen is not unlikely, because, it will be seen by the letter of Doctor TWEEDALE, that he and his brother practitioners "have been remunerated even beyond their expectation." Happy men! How rich in the reward of their moderate desires!

It is time that we should refer specially to the "Rules and Regulations" of the "Lynn self-supporting Institution." And first, let us set down the terms of admission. To us, however, they are absolutely incomprehensible; at least, we are utterly at a loss to conjecture as to what are the data on which the calculations have been founded. But here is the statement of the terms for the weekly contributions, and we can assure our readers that it is copied, *verbatim et literatim*, from a printed paper issued by the establishment:—

"Every individual, without children, *one penny per week.*

"Every *husband* and wife, without child, *one penny each per week.*

"Every widow or widower with one child, *one half-penny each per week.*

"Every *man* and wife with one child, *one half-penny each per week.*

"And for every additional child *one half-penny*, until the family shall amount, including parents, to six in number; after which no additional charge will be made for children under eighteen years of age.

"Every person in the workhouse, infirmary, or a j il, *one penny per week.*

Doubtless this arrangement has been made in accordance with some strict statistical niceties, the nature of which, however, we cannot discover. It will be seen that every "individual" without children is to pay *one penny* per week. Then come husbands and wives, who, being also *individuals*, are to pay *one penny* each per week. Then come widows or widowers, who, it appears, are not "individuals," because they have one child; they are to pay each *one half-penny* per week. Further, it is ordered that every man and wife with one child shall pay *one half-penny* each per week; and if there be a family consisting of husband and wife and ten children (the eldest of the latter not having reached eighteen years of age), the whole are to be doctored by the Esculapians of Lynn, for the handsome sum of three-pence weekly,—*three-pence*,—barely sufficient to pay for an electuary compounded of cow-dung and saw-dust.

A "*husband* and wife," without child, are to pay two-pence a week. A "*man* and wife," with one child, are to pay three halfpence a week. Two grown persons, that is, two adults without a child, are to pay two-pence, and two adults having a child are to pay three-halfpence for the three. *Two-pence for the two,—three half-pence for the three!* More sickening nonsense was never exposed to view. Such an exposition is well calculated to create, in the minds of

the enlightened portion of the community, a feeling of unquenchable disgust towards the members of the medical profession. Every gentleman, every tradesman, every respectable mechanic, must consider that he is robbed when he is called upon to pay the ordinary charges for medical attendance on members of his own family, after seeing it advertised, as in the bill before us, that "for the above *small** subscriptions, the undersigned physicians and surgeons engage "to find every working-hand (residing in "Lynn or Highgate, who cannot afford to "pay for medical attendance in the regular "way), *the best advice the town can produce.*" Dr. TWEEDALE, indeed, tells us, in his letter, that "in establishing this institution, the "practitioners of Lynn were more anxious "to provide efficient medical attendance for "the lower classes, and to inspire them "with a spirit of self-dependence, than to "ensure remuneration for the practitioner." This is exceedingly fine, and very charitable, but the Doctor and his colleagues ought to have bestowed a thought or two on *their own* independence of character, and on the *dignity of the medical profession*, before they attempted, by making sacrifices which no body of respectable professional men could, with propriety, be called upon to endure, to induce others to be self-dependent. If the *morale* of the poorest persons in Lynn is to be obtained by the destruction of the medical practitioners of that place, it will be acquired at an exceedingly high price,—at a cost which the circumstances do not warrant. But, in point of fact, the whole proceeding is an ugly, incongruous farce; and the authors, actors, and managers engaged in it, are equally ill-assorted, and unsuited to their self-chosen situations. The folly of the concern is rendered conspicuous enough by the last specification of the terms of admission. We re-quote the words:—"Every "person in the workhouse, infirmary, or "jail, *one penny* per week." This smells of Somerset House, and, curiously enough, the name of the Vice-President, "CHADWICK," is identical with that of the SECRETARY of the Poor Law Commissioners, who appears to be paid twelve hundred pounds per annum, for doing little more than write libels in the columns of the *Morning Chronicle* against the medical practitioners of this empire, and stigmatising them as "bands of conspirators," who are "bound together in Trades' Unions."

We are perfectly willing to suppose that the "self-supporting" institution of Lynn was indebted for its origin to motives of benevolence; at all events, that the scheme did not arise out of feelings of envy, or from any other improper impulses; but we are, at the same time, compelled to declare, that the admission of patients belonging to the workhouse, the infirmary, and the jail, at a penny a week each, is utterly incompatible with rational views, with this ordinance of the law regarding persons thus situated, and with the prospects of the profession arising out of the same sources. Altered, and disgracefully altered, in many respects, as are the Poor-laws of this country, still, the law of England does require that medicines and medical attendance shall be furnished in case of sickness to the necessitous poor, no distinction being made in our statutes, whether the sick are lodged within the walls of a workhouse, or in their own comfortless cottages. But while the sick are left in the habitations last mentioned, it may be contended that there is no compulsion on the part of Boards of Guardians or Relieving Officers to afford them medical assistance. Not so, however, when the right of the distressed creature is acknowledged by his being taken into the workhouse of the Parish or Union. *There*, he is, to all intents and purposes, in the custody of the Board of Guardians, and entitled by law to receive, under their direction, skilful medical attendance in case of sickness. Here, then, is a chance afforded to the medical practitioner of receiving sufficient remuneration for the application of his labour and knowledge, and he is thus placed in a

* The above HALFPENNY subscriptions.

position to do full justice to the impoverished sufferer. But up starts the "Self-supporting Institution" of Lynn, the eight medical officers of which prostrate themselves in the mire before the Commissioners and Boards of Guardians, and offer to provide medicines and attendance for the poor of *the workhouse*, at *one penny each per week!* A similar stipulation is made with reference to the *prisoners in the jail*. And after all this very dirty work, how are they paid for their medical scavengering? *Not quite two shillings a job*, and the eight contractors divide amongst them, at the end of the second year, £182. 16s. 2d., being twenty-two pounds seventeen shillings and one farthing a-piece, for attendance *in* the town, for journeys *out* of the town, and for medicines to the whole of the patients, including, also, the labour bestowed on the sick inmates of the workhouse, and the prisoners confined in the jail.

In the view just taken of this institution, —that is, with reference to the terms of treatment for the occupants of the workhouse and jail, this "self-supporting" concern at Lynn, is, absolutely, a worse description of undertaking than any one of the Farthing Clubs which has fallen under our notice, for the details are wholly, are utterly subversive of the principle of any *self-supporting* establishment. The title conveys a falsehood, and the practice of the establishment operates as a fraud on the profession throughout the entire kingdom. That Doctor TWEEDALE should be enamoured of this mock "Sister-of-Charity," is not at all wonderful. He would be something more or less than mortal if he did not enjoy, with a dignified spirit, the enviable position in which he has been placed by his supple, but unreflecting, coadjutors. The surgeons of the empire owe few obligations to the surgeons of Lynn, who,—with excellent intentions, no doubt,—have acted throughout this business in a manner which is by no means calculated to increase the respect of the public for *their* "department" of the profession. Was any physician ever more singularly glorified than is Doctor TWEEDALE in the following paragraph, which we extract from the Rules and Regulations of the Institution?—

"No member who may be taken unwell, "will have to encounter any delay in going "about the town begging for recommend- "ation as heretofore, but will only have to "call on, or send to, the book-keeper for a "card, which may be taken to any *surgeon* "whose name is hereunto annexed, most "agreeable to the patient. If the case "should become *serious*, or the surgeon be "desirous of another opinion, or the patient "himself express any desire to see *a physician*, "then the surgeon in attendance will give "A PHYSICIAN'S card, and a consultation will "take place accordingly."

Here is an advertisement in which seven surgeons proclaim the superiority of the physician in the town in which they reside, —a proclamation made to the public of Lynn declaratory of a positive *inferiority of attainments*, and *weakness of intellect*, on the part of the surgeons, as compared both with the mental acquirements and abilities of the mighty M.D.! "If the case should become "SERIOUS, *then* the surgeon in attendance "will give a PHYSICIAN'S card, and a con- "sultation will take place *accordingly!*" Seven *surgeons* make this promise! What a joke. In nearly all other places it might be said that "If a case should become *serious*," the best method of making it a *still more serious* matter, would be to send for the assistance of some person who had professedly received a *medical* education in one of our *non-medical* Universities, and who, having brought away with him the title of "Doctor," had been content to rest his claims to public confidence on that distinctive sign of medical acquirement and ability. Of Dr. TWEEDALE'S talents, of his attainments, of the University or College where he was educated, we know nothing; but this we do know, that the Doctor has been fortunate enough to find in Lynn, seven PECULIARLY GOOD-NATURED COLLEAGUES.

THE Draught Charters for the University of London, and London University College, have been printed, as ordered by the House of Commons. The charter of University College, if it be framed in strict accordance with the draught just printed, will not be of the least value to that institution. It will be an entirely worthless document. In fact, it would become a mere confirmation of the provisions of the present Deed of Settlement. Of this, however, we do not complain. Under a good system of government the College would want no Royal favour, and if the prerogative of the Crown were to be exercised on its behalf, it would sink into an odious and disreputable monopoly.

Of the draught out of which it is proposed to construct a charter for the establishment of a general University in this metropolis, we shall speak at length on another occasion, but we cannot refrain from expressing an earnest hope that Ministers will not proceed another step in this affair until after the re-assembling of Parliament. If money is to be voted for this University, it will not be granted without a severe struggle, unless the members of the House of Commons have an opportunity of expressing their opinion on the terms of the proposed charter before an estimate of the sum is laid on the table of the House. We believe that Mr. SPRING RICE moved for copies of the Draught Charter in a spirit of perfect good faith towards Parliament and the public, and for the purpose of ascertaining the sense of the House of Commons as to the conditions on which it it is proposed to found a Metropolitan University before the Charter receives the sign-manual of the King, but as the document was moved for on the last day of the session, it is impossible for the legislature to take cognizance of the subject until the re-assembling of the two Houses.

WE refer with feelings of infinite satisfaction to the result of the adjourned meeting, held in Southwark on Wednesday last, a report of which will be found at page 878. The surgeons in general practice resident in this metropolis have shown an example which is worthy of being followed by the practitioners throughout the whole of the profession. It is delightful to belong to a profession of which they are members.

SIGNAL FAILURE OF AN ATTEMPT TO ENFORCE A MEDICAL CLUB AT WALWORTH.

To the Editor of THE LANCET.

SIR:—I feel that I should not be doing my duty towards my professional brethren, if I withheld the following important information:—

A meeting of medical men was held yesterday evening (Tuesday, Sept. 13) at Camberwell, to take into consideration the propriety of forming a Medical Club, *according to a recommendation received from the Poor Law Commissioners.* The matter was fully discussed, and on the following motion being put, "That it is highly inexpedient to "form a *Medical Club* in this neighbour-"hood," I am proud to say that more than thirty hands were held up in favour of the motion, while only three were exhibited against it. But the dissentients, to their praise be it spoken, rather than act in opposition to so great a majority of their professional brethren, at once agreed to have nothing to do with the formation of any such club. The names of the gentlemen who attended the meeting, and thus opportunely and spiritedly rejected the commands issued from Somerset House, and redeemed the honour of the profession, I will transmit at the earliest opportunity. I am, Sir, your obedient servant,

E. CRISP.

Walworth, Sept. 14, 1836.

Manuel de Médecine Opératoire, &c.

Manual of Operative Medicine, &c., by J. F. MALGAIGNE, Professeur agrégé in the Faculty of Medicine, Paris, &c. &c. Second edition, pp. 773. Baillière, Paris.

THE manual of operative medicine of M. Malgaigne has long been known to us as one of the best elementary treatises which has appeared for a long time in any lan-

guage. The manner in which it has been appreciated in France is demonstrated by the fact of a large edition having been exhausted in the space of two years; and its success in other countries has been as great as the favour it has received at home, for the Belgian booksellers have done the author the honour of pirating his work, which has, moreover, been translated into two foreign languages. Those who have used this volume during courses of surgical operations, can, we know, speak in high terms of the accurate and highly *practical* manner in which the various operations are described. Without any of the bibliographical parade which encumbers the work of M. Velpeau, the author has contrived to be just as useful, quite as clear, and much more intelligible, while not a single point that can be of use to the student, or even to the more advanced practitioner, has been neglected. The portion descriptive of the manual operations employed in surgery is, although comprised within the limits of a "manual," ample and perfect, while the surgical anatomy is given in a more complete manner than in any other work of the kind. In short, we recommend M. Malgaigne's manual as a production which will fully answer the purpose of students and surgeons, and support the reputation of the author as a writer.

SIGNAL FAILURE OF THE ATTEMPT TO ESTABLISH A "SELF-SUPPORTING DISPENSARY" IN SOUTHWARK.

ADJOURNED MEETING.

The Meeting which was adjourned on Wednesday week at the School-Room in Newington, was subsequently appointed to be held at the *Three Tuns Tavern* in the Borough, on the 14th inst., in consequence of the refusal of the trustees of the former building to allow its further use for the purposes contemplated by the movers of the question; and we have to record, as the result, the complete frustration of the efforts of the little knot of persons who have so assiduously laboured to construct, in Southwark, one of those engines for destroying the respectability of the profession, and the just rewards of medical labour, which have been devised by Mr. SMITH of Southam.

On the present occasion, the chair was taken by the Rev. Mr. ORTON, of the parish of St. George, Southwark, on the right of whom was stationed the Rev. Mr. CURLING and Mr. RUSSELL BELL (late an overseer of the parish), and on the left by Dr. HODGKIN of *Guy's Hospital*, and Mr. HULBERT, surgeon. The room was crowded to excess, and, on a fair computation, about 300 practitioners were present. The chairman having stated the objects of the meeting, several gentlemen enquired how it was that Mr. HAWES, M.P., had "deserted his post" as chairman, whereupon a letter was read from that gentleman, stating, that a previous engagement prevented his attendance. We have reason to hope that Mr. HAWES has been undeceived since Wednesday last.

The Rev. Mr. CURLING rose to make an observation respecting what he called "an attack made on him in a vile publication, which he understood was the organ of the opposition party," in a report of the proceedings of the last meeting. In THE LANCET it was stated that he (Mr. C.) had attended for the purpose of degrading the medical profession. Now, no one had a higher opinion of that profession than himself, and he had uttered nothing against it; therefore the report in THE LANCET was a mis-statement.* Respecting these Dispensaries, he did think they were highly useful and important means of raising the independence of the poor, and doing good to parishes, and that a mechanic who was furnished with medical attendance, by paying one penny per week, would become a more moral, industrious, temperate, economical, and religious character. Whether such an establishment was necessary in Southwark, he must say that, although there were two large Hospitals and several Dispensaries in the borough, there was yet *room* for an institution of this kind. It might be said, "there will not be found patients for a self-supporting Dispensary," but he was sure there would be abundance of them, without infringing on the numbers which daily received relief at the charitable institutions around. Several eminent physicians and surgeons were favourable to these self-supporting Dispensaries. ("Name!" "name!") Dr. Hodgkin! (*groans*) Mr. Callaway! ("No!" "no!" "He has taken warning in time; he has cut you!") He trusted that the medical men present would shew their christian feeling, honesty, and benevolence, by voting in favour of the proposed establishment.

Mr. RENDLE detailed at great length his opinion of the arrangements of the Dispensary, and the character of the patients,—persons who are above want, receiving about

* Not a syllable was reported in THE LANCET as having been uttered by the reverend gentleman, who was simply stated to have been present among those persons who were quite ready on this occasion to lend a helping hand to degrade their brethren of another profession. Before the close of the meeting, 300 medical men afforded Mr. Curling the opportunity of ascertaining that their opinion of the labours of himself and his coadjutors was in accordance with that of THE LANCET.

15s. per week. Some of that class might be induced to join such a club, but the proposers of the present scheme knew literally nothing of the state of the borough,—none of them having been in practice there for any length of time. He considered that no necessity existed in that district for any such establishment.

Mr. RUSSELL BELL said, that in consequence of the medical "cabal" of last Wednesday, he was prevented from entering properly into the subject, but he now would contend that a Self-supporting Dispensary would be an admirable institution in Southwark. Persons in the middle working-classes were continually being ruined by doctors' bills. He had possessed many opportunities, as overseer of St. Saviour's parish, of witnessing lamentable instances of this; and to prevent their recurrence, he should support the proposed Dispensary. That medical men would be injured by it was no reason against its formation. Mr. BELL then read two cases in which N. N. and O. O. had been miraculously enabled, by subscribing one penny per week to the North-Western Self-supporting Dispensary, to rise from a state of miserable indigence to affluence. (Laughter.)

Mr. BRADY said that the pseudo-philanthropists who were attempting to establish this fraud, consisted of two classes of persons —those who came there as emissaries of the Poor Law Commissioners, (of whom he intimated that Mr. Bell was one,) and those who wished to get a picking out of the penny subscriptions. He contended, that if these clubs were established, the sympathy existing between medical men and the poor, now so general, would cease. It was most unjust for the last speaker to charge medical men with being guilty of acts of oppression and tyranny. No other class of persons did so much for the poor without reward, or were ever so ready to attend to the call of distress. (Cheers.)

Mr. GAZELEE, (who said he was a medical man, but from the character which he gave of the profession, the statement was doubted in the meeting,) contended that these Dispensaries would effect vast good. Very many persons required their aid. As for the much-vaunted charity of medical men, he demanded of the assembly, whether medical men did not sometimes oppress the poor? (No, no.) Were they accustomed to "wipe off bills" when the patient was too poor to pay? (Yes, yes.) He contended that they did not, and he felt that the present opposition was unjust and factious,—wholly raised by medical men, and that it did no honour to them. They had advanced no proof that medical clubs would be injurious to them, nor any arguments that they were not wanted by the poor. (*Groans.*)

Mr. CLARKE said, that it was unfair for the proposers of the plan to charge the opposition with poverty of argument or proofs, since they who contended that these clubs would be beneficial, had advanced neither in support of their assertions. They had, it was true, talked of professional tyranny and oppression, but not one case had been adduced to show the public value of the self-supporting system. On the contrary, he would prove that the North-Western Institution, which had been so lauded by every speaker on the other side, was not self-supported, but a "charity." The secretary was present, and he called on him to read to that large and respectable assembly the report of the institution, and the account of its funds, three-fourths of which came from honorary subscribers, who gave tickets of admission to people who were in receipt of 40s. per week. ("*Hear, hear.*") Out of 1,700 members, not a fourth contributed to its treasury, as a little calculation would prove.—Loud calls from all parts of the meeting at last brought up the secretary, who, in much alarm, amid deafening cheers from the opposition, read the following statement:—

1,700 patients.		Funds.		
Honorary members,	-	£350	0	0
Paying patients,	-	125	0	0
Loan from treasurer,	-	50	0	0
		£525	0	0

A letter was then read from Dr. Tweedale of Lynn, who said that in spite of the opposition of Mr. WAKLEY, his medical club had been completely successful at Lynn, and would still prosper in spite of THE LANCET.—A young man named WYLIE then advanced to the table, but the meeting would not hear him; in revenge for which he endeavoured to cause a disturbance, but unsuccessfully.

Mr. B. EVANS, surgeon, of Trinity-street, an old inhabitant of the borough, said he could speak from experience respecting the medical attendance on the poor; no district could be better or more faithfully served by the parish surgeons; there were many medical men in the neighbourhood, and several, of course, who wanted to push themselves into practice, and perhaps the promoters of this club were of that number. He could tell this meeting, that the Self-supporting Dispensary system had just met with a death-blow, in a neighbouring parish (Camberwell.) After a most dispassionate discussion among the medical men, every medical man there, except a Mr. MANICO, who expected to be secretary, shrunk from the scheme. The friends of the present meeting had striven hard to effect their object, even Mrs. Hulbert having been round the parish, from house to house, soliciting support for it. She had called at his (Mr. Evans's) house one night as late as 10 o'clock for that purpose, and she stated that she had been walking all day on the same errand. The

fact was, that like all other dispensaries this was designed to serve the purpose of some persons who believed in the maxim, that "Charity begins at home." Some facts regarding the Southam club were not altogether very honourable to it. That also, was not a self-supporting club, but was chiefly supplied by contributions, like other dispensaries. Such an institution in Southwark would not catch in its net the improvident artizan, who would still be improvident, and the provident man did not require it. Besides, it was not right to attempt to create general providence among the poor at the expence of medical men. (*Cheers*).

Mr. JOHN ELLIS thought the meeting had been too personal; he did not care whether medical men supported the cause or not; they had conducted themselves badly that evening, though he must say, that Mr. Gazelee had not treated his brethren well. It was wrong to charge them, as he did, with want of humanity, and his observations generally were personal and offensive; he thought, indeed, that medical men not living in the district were intruders at this meeting. (*Laughter.*) For himself, he should act as he pleased, in spite of any body.

Mr. FALL (a gentleman of fortune, as we understand, residing in Southwark), made some observations on the speech of the Rev. Mr. CURLING. He did not think it was the province, or becoming the dignity, of a Christian minister to make such observations as some of those which had been used by him (Mr. C.), especially with the advice on his lips to medical men, to show their "honesty and Christianity" by voting for this measure. It implied that all men who voted against it were dishonest, and infidels. Was this Christian charity? The fact was, that the Poor Law Commissioners were endeavouring, but in vain, to establish a club in this district, as in all other districts throughout the country. Would medical men seal their own degradation, by joining in such a fraud? For the honour of the profession, he trusted that they would not.

The Rev. Mr. CURLING said, he meant no offence to the profession, and feared that his observations were mistaken. ("No, No!")

Loud calls for a division now arose on the former resolution and amendment, in the course of which it was stated that Mr. CALLAWAY now disapproved of the club system, and would not attend; that Dr. Roberts would have nothing to do with it, and that Mr. Hawes had abandoned it. Dr. HODGKIN then attempted to address the meeting, but his opening sentence, "that he was ashamed of the medical men present," produced such marks of excitement, that he suddenly retired to his seat, amid evidence of much contempt on the part of the meeting, and cries of "You say you are ashamed of us; we have more cause to be ashamed of you!"

The amendment was then put, to the effect that Self-supporting Dispensaries were neither useful nor necessary; and on a show of hands, the numbers appeared to be,

For the amendment,.....about 300
Against it,..... 16

Thanks were then voted to the chairman, and carried by acclamation, his conduct having been in every respect impartial and honourable.

TO CORRESPONDENTS.

A COMMUNICATION, extending over eleven pages of closely-written foolscap, has been forwarded to us by Mr. P. BENNET LUCAS, late demonstrator of anatomy at the medical school of Charing-cross Hospital, relating to the controversy which is now raging between certain persons who are and who have been connected with the "Hospital," and constituting a reply to the statements and remarks of Mr. G. JONES. In its present shape, it is impossible that the communication can be inserted in our pages. If Mr. LUCAS would embody such facts as he may have to state, within one quarter of the space which his writing now occupies, we would willingly find a place for them in the columns of our publication. We have put aside his paper with feelings of regret, but we cannot find room for documents of such extreme length.

THE present number of THE LANCET will conclude the volumes of the journal for 1835—36. There remain, however, four of the admirable lectures of Professor BROUSSAIS for publication, and, in order that the whole of the lectures may be included in this volume, and that the readers of the journal may not be subjected to the disadvantage of having those discourses divided into two sets of volumes, of two distinct years, the four lectures yet unpublished will be printed in a supplementary form, and issued with the current numbers of the journal within a few weeks from this time. In the Index a brief reference is made, under the proper head, to the part of the volume where the supplemental lectures are to be introduced by the binder.

OUR correspondent at page 871 is correct, both with reference to the object we had in view and the amount of the fees. At an early period, the guinea fee will be obsolete. Medical witnesses will find it impossible to give satisfactory evidence without a post-mortem examination.

AT least a dozen correspondents, who (to use the words of one writer) "considered that the extraordinary lecture lately delivered at the Westminster Hospital was simply a quiz," think that the confirmation of its authenticity supplied last week, justifies a host of comments on Mr. Guthrie's clinical eccentricities, but we have not room for even one of their communications.

LECTURES ON PHRENOLOGY,

DELIVERED IN 1836,
IN THE UNIVERSITY OF PARIS,

By M. BROUSSAIS,
PROFESSOR OF GENERAL PATHOLOGY IN THE FACULTY OF MEDICINE.

LECTURE XVII.

30.—EVENTUALITY.

GENTLEMEN: — We have reached the "eventuality" of SPURZHEIM,—the memory of things, the "educability" and "perfectibility," of GALL. All phrenologists admit this faculty, but SPURZHEIM gave it a name which characterizes its function,—the sense of events,—a faculty which is unknown to metaphysicians.

Situation.—It is placed in the middle of the forehead, above individuality and locality, corresponding with two convolutions placed in the median line, and only separated by the falx. It is below comparison, and on the inner side of time.

Primitive Impulse.—This is to seize upon actions, changes, and modifications of bodies which are made known by the perceptive faculties. SPURZHEIM tried to give us a precise idea of it by saying that *individuality* seeks out bodies, material things; *eventuality* relates to things represented by verbs. Thus it perceives the action for the active verbs, and the passion for the passive ones. Passion always accompanies action, for where there is an active agent, there is always a passive subject: one receives the action; the other gives it. All this comes from the verb, both the action and the passion. You will understand this better by the applications I shall point out.

Applications.—The faculty is in action in all considerations of events, at the head of which is history, which this organ particularly regards. History is, then, more or less fertilized by other faculties. Now, each science and art has its history; consequently, in the study of all of them eventuality is occupied, to compare the past with the present. Observe what takes place among the professors in our schools; some apply to the history of a science; others to its demonstration. In philosophy, the most celebrated course of late years related to the history of philosophy. But the faculty is sometimes employed upon fictions, romances, poetry, which treats both of real and supposed events, and the value of the production is estimated according to the inventive powers of the narrator, as in epic poems. Also, in diplomacy, in politics, in all circumstances of civil life involving political events. Journalists live by this faculty. They search every where for events. We find them also in jurisprudence, which is a history of laws and times past, and in all judicial debates, and the discussions of societies, for events are their food, and they are continually going from discovery to discovery. In conversation, all persons shine who have the faculty of remembering every thing; tellers of anecdotes have this organ much developed. I am assured of this from continued observation.

Auxiliaries.—They are numerous. Language is the chief. Afterwards, the localities, to acquaint us with places; then individuality, in order to distinguish things and persons, colours and extents from each other,—in a word, all the receptive faculties. The more facts a speaker has observed, the more eloquent he is, the receptive faculties being simultaneously strong. But he becomes fatiguing to the audience when cunning is much developed, for it produces lying; and a large imagination makes him exaggerate; unless, indeed, the higher faculties are powerful enough to regulate eventuality, for it cannot act alone.

Antagonists.—Circumspection is the first, for this puts a bridle on the tongue. Great talkers generally want circumspection. That part of the head is depressed in them. If you confide a secret to persons who possess a great abundance of facts without having circumspection, your secret will soon be told. Then comes cunning, which causes the eventualist to speak with caution, and renders him always master of his words. Appreciation of causes always make speakers careful. Those who have little judgment and causality, are continually talking. Others only say what it is necessary for their hearers to learn. Self-esteem, also, will prevent a person from compromising himself by indiscreet language, and the love of approbation will also sustain loquacity, if both are seconded by the judgment. Veneration and benevolence also check the generality of narrators. The lateral propensities, acquisitiveness, destructiveness, malevolence, anger, tend to give it a false direction, and are not, properly speaking, repressive; but if cunning seconds them, the tongue may be restrained in the interest of those propensities.

Absence.—Persons may hear facts recounted, or witness them, and yet not have the faculty of recollecting or relating them, but may avoid narrative as a painful task.

Examples.—Instances of remarkable historians, and drawing-room speakers, have not been much looked after. However, here is MULLER, author of the "History of Switzerland." We find in him, together with eventuality, language, and facility of expression, that is to say, the principal auxiliaries of this faculty. We cannot estimate the quality of the superior faculties because we have only a mask to judge from. When phrenology is better appreciated, we, or our successors, will have more numerous examples for demonstration.

Pitt is quoted as a man who could fully appreciate the importance of events, which he made the basis of his policy, and, in fact, this organ is remarkably developed in his mask. Here is Casimir Perier, who was always considering events. I was very intimate with him, and have often seen him, when he had nothing particular to do, sitting before his *Moniteur*, which he had bound up with great care. "What are you doing there?" I said to him, one day. "Reading my breviary," answered he. At this time he was continually in dispute with Villele, and was anxious to refute him by citing a number of antecedents, in order to put him in contradiction with himself and his party. In this manner Casimir Perier made his political fortune. See how prominent is this organ on his head. Here is Foy. You know with what advantage he used the events of ancient and modern history. Wherever he travelled he searched for facts. He personally verified all inventions, visited all manufactories, examined every thing of which he was previously ignorant; and his great eloquence was continually drawing on his immense collection of facts with success. But he possessed, as I have told you, many other faculties largely developed. I defy you to show me such an assemblage of superior organs in those learned doctors who attack phrenology with their bad jokes. Examine St. Simon. He has the inferior line of receptive faculties very much developed, which prevents the upper part of the forehead from appearing to be so. Yet it is well developed; for, measuring from the ear to the upper part of the forehead, you find a considerable extent of surface. This man has personified history. He likened the successive generations of the human race to a man who arrives at the different periods of life—infancy, youth, manhood, old age. This is the effect of the junction of ideality and comparison with the organ of events.

Desormeaux had a fine head, but the nervous movements were very slow in him. I shall speak to you of cerebral movement when I arrive at the action of organs. This professor retained in his memory the whole of the facts relating to *his* branch of medicine (accouchements), and derived great advantages therefrom, by means of his excellent judgment. He thus showed himself superior in a celebrated *concours*. See how *facts* are develop ed in his head.

Here is Bory de Saint Vimont, to whom it is very agreeable to listen; he speaks uncommonly well, and has a head full of facts. See how the organ of events projects. We presented to you an English Minister (Pitt), who paid great attention to facts. Foy paid less attention to events than to moral considerations. Cromwell listened more to his passions than to facts. He caused a king to be executed. There are not many examples of the same nature in history; but we have not this bust entire. I have known many continual relators of anecdotes, and they all had this organ highly developed. I know one talented man of this number who only lives among past events, and he has large veneration; the ancients are with him almost objects of worship. One has much pleasure in hearing him say so. Even when almost at the point of death, he was continually occupied with events. Nay, he related anecdotes during a painful operation. In him the organ is prodigiously developed.

I told you that Gall attached educability to this organ, which, in fact, is very much developed in children, and in them a necessity for learning exists. They remember events well, and the more the organ is developed, the easier it is to instruct them, for their first lessons consist entirely of words and events. You teach languages first to children, and afterwards history.

Animals.—In the dog, for example, this part (placed higher in dogs, or, rather, farther back, on account of the frontal sinus) being much developed, the easier it is to educate that animal; that is to say, he recollects better the chastisement he has received, and also the rewards—both of them events. Gall founded on these facts his "educability," which term Spurzheim corrected. You see there was a foundation for the term, although it gave but a vague idea of the function of the organ. "Eventuality" better indicates its primitive impulse, and agrees well also with Gall's notion, because domestic animals, the only ones capable of good education, are, in fact, those which retain a memory of events better than any other animals. The different degrees of eventuality in animals are still open to the observation of phrenologists.

31. Time.

Situation.—This organ belongs to Spurzheim. Gall thought there should be such an organ, but he did not disclose it. It is situated on the lateral part of the forehead, on the middle line, above colour and weight, external to locality, internal to tone, and below gaiety. Here is the convolution of the brain which corresponds with it.

Primitive Influence.—I venture to say that phrenologists have not sufficiently considered this organ. They have paid particular attention to the measurement of time in music, and they have spoken of certain persons who, when asked, could tell exactly the hour of the day, and even when awakened in the night could judge the time with accuracy. A M. Chevalier, whose bust we have not got, is cited as having possessed this wonderful faculty.

I believe that the question of time is one of great importance. Philosophers have said much of it in detail; I have read the

writings of those who have appeared to me to examine it most ably, and I have compared their remarks with those of phrenologists, and I think (without positively affirming it) that the latter are in the back ground on this subject. In my opinion the organ gives us the power of perceiving the duration of time, as philosophers have said, by the succession and variety of our impressions; for while we are under the influence of the same impression, we do not perceive the progress of time; but a change to another impression instantly excites us to note the period. This is one part of the faculty of the organ; the second,—the one which has been overlooked by phrenologists—is, if I am not mistaken, (for I have not read them all), to model duration upon space. Metaphysicians have abundantly discussed these two faculties, but I think I may sum up all that they have said in this sentence,—The faculty is to appreciate duration by the succession of our impressions, a phenomenon which is entirely derived from sentiment;—an association of the sentiment of duration with the sentiment of space;—measuring duration by taking for a model material space. Consequently the word "time" offers a double signification. Without being compared with space, it only causes us to perceive a succession of sentiments, as in music, for example. Compared with bodies which occupy space, it gives a notion of an intellectual faculty of the receptive kind. Perhaps I am rash in pronouncing upon it so positively; but I have only said what I think. If you wish to study time upon yourselves, you will perceive its duration, more or less, according to the perfection of your instincts. But you have also for its auxiliaries your functions in general. The want of nourishment, of repose, of sleep, establish the most remarkable points of duration, independently of its comparison with space; the organ does not act singly; that is evident. The sentiment of want is associated with the material modifications which satisfy it. The sentiment of duration is not less naturally associated with the movement of the stars, which are material bodies. It is attached to all the regular movements of life, even of savage life. Thus this sentiment becomes a faculty of relation. Next comes the invention of the dial, which separates duration into divisions and subdivisions, equally material, in the space which they occupy on the material face of the dial, and we thus have the notion of time completed by its relation with space. As soon as this notion becomes familiar to us, and we are well accustomed to, and practised in, the association of time and space, we really calculate duration only by *space*, and we actually lose sight of the *sentiment* of time, unless we feel tired. The fractions of space are associated with all events, and even, by degress, with all bodies in nature; and duration becomes one of their distinguishing qualities. It is thus that time plays a very important part among the functions of relation.

Considered in this manner, the faculty of appreciating time has several degrees among men, some of them being very exact; others not so. There are also men who are always thinking of time, of the hour of the day, and of the distribution of their hours. The organ is then associated with that of conscience, of punctuality, of attachment to one's duties. Other persons present opposite dispositions; but these facts are attached to the question of auxiliaries and antagonists.

Applications.—The organ of time is applied to chronology, astronomy, chronometry, geometry, (which is not content with measuring time, but also calculates it beforehand), to the sciences which relate to light, to dioptrics, to catoptrics. You are told how many minutes rays of light take to pass through a certain space, and through media more or less dense. The organ is also employed in mechanics, in hydraulics, physic, chemistry, in a word, in all proceedings which have for their object the observation and modification of bodies. Time is also necessary in music, and it is the association of that organ with tones which strike our ear as material things, that the sentiment of duration is converted into a phenomenon of relation. In the same manner time is applied to poetry and phraseology. Poets must not allow their verses to fatigue us. We must have time to breathe in reading them,—consequently, an union between the cadence of phrases in prose and verse, the time of respiration, and the strength given to man in order to sustain the emotions. The influence of the organ of time is evident in all this. If it be too much developed, the subject is no longer in relation with the masses. There are persons who have a false tone in their voices, and whom it is painful to hear. Others utter phrases which we cannot follow, their time of respiration not being in unison with our own.

Auxiliaries.—These are very remarkable. First, there is extent, or space, without which faculty the sentiment of duration would not produce scientific results. Besides the application which I have shown to you, and which points out to us several powerful auxiliaries, such as the instinctive wants, (hunger &c.), tones, ideality, we should also mention conscience, and self-esteem, with love of approbation. This association yields us men who know how to appreciate every minute, who are careful in fulfilling their duties, and who are excessively punctual. Circumspection and cunning are, also, means of putting into action the organ of time; but we should place these amongst the *regulators* of the faculty. The organ of number cannot do without it. Music, poetry, and eloquence, are nothing without it.

Antagonists.—These (for it has some) are evidently the gay sentiments, the pathetic, or the malignant, (provided they be impetuous), which conceal the duration of time. We find regulators of the organ in circumspection, cunning, and order, which, properly speaking, are neither antagonists nor auxiliaries. After these come the high intellectual faculties, reason, comparison, and appreciation of causes, which are the supreme regulators.

Examples.—We might cite all those men who value time, are punctual and methodic, and at the same time conscientious. All the fine heads afford examples of it. MANUEL has this organ much developed. JULIEN, of Paris, has written on the employment of time, and in him the organ is much developed, but it is secondary to others, which act in concert with it, and which you already know. In KREUTZER, time, adapted to music, should strike your observation. All good musicians have it, and, more or less, the organ of mechanism. LISTZ, of whom the journals have spoken from an early age, was remarkable for his time and execution. How prominent are time and mechanism in his bust. Here, again, is a first prize of the museum, DELPHIN CHOROLT, in whom time is greatly developed. There is also VARET, whom SPURZHEIM has cited, a man who remembers, for instance, the dates on which the whole of his fellow pupils at the university to which he belonged, entered upon and finished their studies, during a great number of years. Chronology (in eventuality) is well marked on his head.

Animals.—M. VIMONT cites, from the work of LEROY, Lieutenant des Chassés, at Versailles, pheasants, rabbits and partridges, as having the sentiment of time. Not being a sportsman I have not paid much attention to these field animals, but I know very well that the dog, the cat, and the horse, have the sentiment of time, not caused by the return of the periods of hunger, thirst, &c., but purely nervous, and, consequently, cerebral. You have only to use them to do something at a given time, and they will proceed to it constantly afterwards at the same hour. Take your dog out to walk at a certain hour, and he will signify his desire to you to go out every day at the same hour. Harness your horse at a given hour, and he will prepare himself for it whenever the time arrives. Change it on a sudden, and he will be discontented. It is not long since I commenced lecturing here, and yet one of my horses knows better than the other when the hour for leaving home arrives, and he shows by the movement of his ears that he is not sorry to set out, which he does gaily. If the lecture be postponed, and I drive him in an opposite direction, he goes with reluctance on the new road, and his ears seem to say "You are making me perform an extraordinary task. I do not know how long it will last, for I am ignorant where we are going." It is certain that we can interpret the instincts of animals, if we do not harrass them by too much work, but treat them with kindness, and gain their affection and confidence. I regret that no one has finished the "History of the Instinct of Animals," begun by GEORGE LEROY, and that this work is the only one of its kind. But we must have philosophical agriculturists and sportsmen in order to supply the deficiency of naturalists, who can only contemplate those animals which are degraded by captivity. It is time to cause this wall of brass to disappear, which metaphysicians have raised between men and animals. Is it not astonishing that we have studied anatomy and physiology so long without comparing our cerebral faculties with those of animals? GALL has always complained of it, and M. VIMONT is the only one who has undertaken to fill up this deficiency. But a man must pass his time in the woods and fields to study this branch of knowledge with success.

But to return to the faculty of time in animals. M. VIMONT has cited the history of his parrot, whom he feeds at regular hours. The animal knows that he must eat very little at the first repast, and a little more at the second, but at the third he is allowed to make a good dinner; and all this he regulates with exactness. I have already said, that in considering the departure of swallows in Andalusia, I suspected that they possessed the sentiment of the duration of time, since it was neither the cold nor a want of nourishment that determined their emigration. But my observations on wild animals have been too few to allow me to speak of them in detail.

32.—MELODY, TONE.

Situation.—Melody, ("tone" according to SPURZHEIM,—"music" according to GALL, who named it from its *application*, from which he drew the elements of all his discoveries), is situated at the lateral external part of the frontal bone, below the crest which limits the insertion of the temporal muscle anteriorly. The organ has a pyramidal or rounded form. It is above that of order, below gaiety, external to time, and internal to constructiveness. It enlarges the inferior part of the forehead. You see the cerebral convolution which corresponds with it, for as the plaster brain does not convey a very good idea of it, I have recourse to this head. Observe the crest of the frontal bone, which limits the insertion of the temporal muscle. The organ is precisely there, at the limit of this insertion, covered by this apophysis, or crest, of the temporal bone, which mounts up from the external angle of the eye to the top of the forehead. Upon this head the organ is oblong. Upon another it will be pyramidal. At all events,

it is very easily recognized. Before I had acquired any taste for phrenology, I was in consultation at the house of a music-seller, in a room surrounded by the portraits of forty musicians. In all of them this organ was prominent, and the circumstance made such an impression on me, that I reflected upon it all day. I said, "GALL is no fool." And, in fact, there are few organs so well developed. Sarcasm can oppose nothing to this fact. Now let us find out its primitive action.

Primitive Action.—To seize the tones which are called airs, and learn them with facility. To seize upon melodies, and to reproduce them, which latter is the stronger faculty, for to learn and to produce are distinct things. Consequently, each organ which is called *receptive* has two functions,—to seize the impression at first, and to re-act upon the muscular system and produce an imitation. According to phrenologists, the highest degree is that which produces; the middle degree is that which seizes and imitates; and the last degree is that which, during the continuance of the airs, gives the individnal a certain degree of pleasure, but which neither imitates them nor produces airs. Let us invert what we have said:—To seize upon an air, 1st degree; to be able to produce it, 2nd degree; to create others, 3rd degree, the highest that the organ presents. The observations of phrenologists tend to prove that these three degrees are in the ratio of the development of the organ. This I give you as positive, according to phrenologists, but I repeat for myself, that I find in it the probability of an organ of re-action, combined with an organ of reception. But this is only a probability. You see how improperly they have given to the sense of music the name of a "good *ear*," an expression which was, with a good deal of justice, censured by the illustrious GALL, when he discovered this faculty. In fact, it is not the ear which perceives the tones. The ear transmits the impression to the brain, and then the brain, which receives it, feels and increases it more or less.

Applications.—To music first of all. But in order that the talent for music may be well developed, it must have the assistance of time, considered as the organ of measure. We find the application of this faculty in poetry, as well as the application of time, and that does not prevent poetry from requiring all the accessories which we have pointed out. It is also seen in oratory. CICERO has put more melody into his cadences than any other man. There are many persons whose prose resembles poetry. FLETCHER and BOSSUET are examples, among authors of ancient funeral orations; and, amongst the moderns, authors whom all the world knows, CHATEUBRIAND first, who has put music into all his productions; and P. L. COURIER. In some languages there is a species of music resulting from the association of tones and time with the organ of speech. The people of the south have long syllables and short syllables in their words, which they never omit to accentuate; whence it arises that they put melodies into their prose. On the contrary, those who have not the sentiment of tone, nor time, speak in a disorderly manner, and are disagreeable to listen to. This may be the case even with men of talent; and sometimes we see them surpassed in the world by men of inferior capacities, who have the talent of speaking in a measured and musical manner.

Auxiliaries.—A man must be a composer of music in order to have a high station as a musician, and you know that time or measure is the principal auxiliary of music for composition. For execution, other faculties come to the aid of this one, such as the sense of mechanism, of weight, and of resistance, and the difficulty of uniting so many qualities is the reason that men of talent are so rare. This observation may be applied to all kinds of celebrity, as well as to that of music. Different faculties may be well developed in many persons; but one single faculty, were it ever so large, and of the highest possible order, would never make a man of genius. It will only produce "originals," who are feeble and ridiculous in other respects. In order to become remarkable for talent, the concurrence of a number of organs, of a high order, and in a high degree of development, is necessary, if we consider the degree of civilization at which we are arrived. That is the reason why men of talent are so rare.

Well, Gentlemen, these considerations are nothing to the enemies of phrenology. We hear them say, in substance,—"I have not studied phrenology, but it must be all nonsense, for if it were not I would have studied it." It is pride which dictates to them this language, in justification of their carelessness and ignorance. You see, Gentlemen, how many things must be considered before we pass judgment on a science.

After the fundamental auxiliaries, (time, measure, mechanism, &c.), come the sentiments of weight and resistance for the execution. Generally speaking, the higher order of composers have all these faculties. But ideality, gaiety, the marvellous, and all the pathetic organs, are those which give the brevet of superiority,—which makes them able to command admiration, and to render their compositions durable after the first emotion has passed. If it concern tragedy, then the strong passions are necessary; in a word, all the passions which the composer can command. Then we have another motive for considering how rare must be composers of the first order. Demand the explanation of all this from any other science than phrenology, and see what answers you will receive.

Antagonists.—These are the reflective faculties, not the receptives, for it requires those. Circumspection, and a great desire of approbation, which inspire the fear of compromising one's self. Nevertheless, if the organ be very powerful, it derives from this sentiment motives for renewed efforts, particularly if it be sustained by courage. If it be not powerful, approbation hinders it from becoming developed. In order to succeed well in the expansive talents, we must not be timid. We must esteem ourselves a good deal, and be very bold. This is the fundamental principle, without which we require an infinity of study. The man who has much circumspection and not enough of self-esteem, requires time before pushing himself forward, but when pride has the ascendancy, he advances from the time of his entry into the world. Nothing stops him; he sees no obstacles. I speak to you thus in order to make you perceive the influence of the auxiliaries and the antagonists of the organs of which we speak.

Examples.—These are sufficiently numerous; it is one of the faculties of which phrenology possesses the greatest number. You see this part, which corresponds with the insertion of the anterior fibres of the temporal muscle. PARISET had it developed, and LISTZ, who from his infancy enjoyed great celebrity, for this faculty is one of those which is easily developed. You see it here, forming a pyramid at the angle of the eyebrow, and continued upwards. Here is NEUKOM, a composer of sacred music. CHORLT, also, has it developed, but not entirely, for the head is yet young. KREUTZER is a celebrated German musician, but it was particularly in France that he acquired his fame as a composer and a player on the violin. But I will not quote more examples, because our time is precious, and you can have as many as you please by examining.

Animals.—M. VIMONT has compared singing birds with those which are not so; and, amongst the former, females which do not sing, with males which alone possess the faculty of singing. In order to abridge as much as possible what he has said on this subject, I will add, that he has found the external angle of the orbit which corresponds with this organ, more developed in singing birds than in others; and, amongst the former, the nightingale, for example, has it much more in the male than in the female. This is what prevents the organ from being elliptical and regular.

With regard to quadrupeds, M. VIMONT has not been able to prove any thing. We know that the dog begins to howl when he hears music. This howling cannot be attributed to the sentiment of music, and the anti-phrenologists are wrong in taking advantage of this circumstance, when speaking against the science. They also quote an idiot in some hospital, who produces certain disagreeable sounds, and has not the organ of tone. This is not music, it is a noise which serves to amuse the idiot, but has no relation to modulated sounds. I shall terminate this lecture by speaking of the organ of language.

33.—LANGUAGE.

Language, according to phrenologists, is the last of the receptive faculties. It was discovered by GALL, who named it "memory of words," having remarked that those of his comrades who had this part much developed, learned their lessons much quicker than others,—that they recollected words and the phrases of authors, and were always superior to those of a different conformation. But this was during their first years of study. His observation was very just. Children who retain words easily, may excel when in the lower classes, but are frequently surpassed in the superior faculties when it becomes necessary to exercise the intelligence. GALL admitted two organs; one for the facility of acquiring, and the taste for, languages, "philology," and the other for retaining words. This division has not been received.

Situation.—It is placed in the anterior and inferior part of the anterior lobes of the brain. Here are the anterior lobes. Here is the organ, consisting of a convolution, elongated from before backwards. The inferior surface of these lobes lies upon the superior plate of the orbit, from which it happens, that when the organ is much developed, it gives the eyes a different direction from what they commonly have. They become projected, sometimes pushed a little downwards, a thing which may be easily conceived, and sometimes a little towards the outward angle of the orbit. In those persons who have the eyes depressed towards the inferior edge of the orbit, the inferior eyelid is larger than the superior, but if the eyes are pushed directly forwards, the eyelids may be of equal size.

I believe I must add the following observation. There are good speakers in whom we may observe a great space between the eyebrow and the cheek-bone, without having projecting eyes. I think that this also announces a considerable development of the organ. It appears to me that the great size of the organ transversely, but particularly from above downwards, announces a great development of the organ of language. So much for the situation. It is useless to take up your time in speaking of its relations. Let us proceed to its primitive action.

Primitive Functions.—We here meet with the same difficulties as in all the other receptive faculties,—difficulties which I have already announced to you, and which phrenologists have not resolved. Here there are two things to be done, as in all the re

ceptive faculties,—to seize the sounds (the words) and to retain them, and afterwards re-produce them. Every one can seize and re-produce them, more or less perfectly; but it is only those in whom the organ is well developed who can re-produce them in such a manner as to merit the appellation of good speakers. On the other hand, this organ has furnished the elements of the invention of language. In the commencement of language it made known to the intelligence that articulate sounds could correspond with each mode of thinking, and each manner of judging, from each of our perceptions. Here are plenty of attributes. By dividing this series of phenomena you find the perception of sounds, and their distinction; then the re-action on the vocal apparatus in order to re-produce them, and all this independently of invention. You cannot have recourse to any other organ as an auxiliary in the function of re-producing sounds and words. For the application you have got auxiliaries, as you shall see; but not for the primitive action. It is this organ that has caused man to perceive that the impressions produced by bodies, — that ideas, judgments, the sentiments, and the instincts,—might be attached to articulate signs, and afterwards retraced by writing. It is this organ which recognizes these signs, and attaches to them their value. Finally, it is it which re-produces them by its action upon certain organs of motion. In order to acomplish the latter object, a re-active portion was necessary, which might act upon the muscles of the voice; for imitation is often *wanting* in the human species, although the faculty of *language* may be well developed. Then comes my opinion, that in most of the receptive organs there are *two distinct portions*, one destined to perception, and the other to act upon the muscles, in order to produce the manifestation. We find the same thing expressed by phrenologists, who allege that the smallest degree of development in an organ corresponds with perception, and the highest with imitation and re-production.

Applications.—You will judge of this function best by its applications. It is applied to languages, and to the faculty of learning languages; but it acts in concert with other faculties, particularly with intelligence, and with the other receptive faculties which represent the attributes of bodies. That is to say, (that we may not speak too figuratively,) when you hear a new word pronounced, you have two things to do,—to retain the sound, and to apply it to something animate or inanimate, in order to distinguish it from every other; or else to apply it to one of the faculties of man or animals. The sound is easily retained; it is a purely instinctive phenomenon. The idiot and the parrot are proofs of that. As to the application, you have the representation of the object, scene, or event, as auxiliaries, or the intellectual faculty of the man or animal which is presented to you. If you have all the faculties which are necessary to appreciate these differences, that of learning language will make great progress, whence it follows that a child does not learn a new language so easily as a grown person, although it may have a better memory. Language, then, has its auxiliary faculties. The child will retain the sound better than the reasoning man, but it will not attach a determinate signification thereto so promptly, because the child does not possess all the auxiliary faculties which the other has.

The principal point in phrenology is to avoid placing to the account of an organ what does not belong to it. In order that the faculty of language may be much developed, it is not necessary that the intellectual and receptive faculties should be considerable; but it is necessary that they should exist. The proof is, that idiots do not learn languages, although they repeat the sounds which they hear. The parrot also learns words, but neither the one nor the other possesses what is necessary for their appreciation.

Applications and Associations.—Let us now examine language, together with the principal faculties, in order to have a just notion of it. If the faculty of language be strong, and the principal faculties not so, language is abundant, but it is not agreeable, nor has it much signification. If the receptive faculties predominate in an individual who has the organ of language, he will like to relate facts, describe things which he has seen, and particularise events, and that is all. If the man who has language possess also the organ of order, his conversation and discourses will be perfectly-well arranged. Every thing will appear in its proper order. If he have it not, all will be irregular. If this man possess the faculties of time and tone, his language will be harmonious. If mimicry be joined with it, he will be given to jesting, and his language energetic. If the passions predominate, he will represent them by his language, and particularly that which is strongest, and cause his auditors to participate in them. If ideality and marvellousness be strong, his discourse will be full of images, and extremely seductive. If he have much pride, he will be continually speaking of himself without thinking of it. This I have verified. If he possess veneration, he will talk to you of sacred things, or of what concerns authority, power, &c. If the posterior part of his head predominate, he will speak to you of his children, or his friends. If combativeness and destructiveness predominate, he will boast of his exploits. The conversation, in short, under these respective circumstances, will be influenced by those faculties which have been most exer-

cised,—whose employment gives the greatest pleasure.

Auxiliaries.—The principal auxiliaries are the receptive faculties, which make us acquainted with the bodies about which we are to speak; and eventuality, which relates the incidents. Afterwards come gaiety and imagination, which faculties we have called theatrical. We may consider them as the principal stimulants of the organ of speech; for those who speak with the most effect are those in whom these faculties, and language, are developed. Such persons are never at a loss. I frequently receive visits which are not professional. As soon as I hear a man beginning to speak without any kind of preparation, using jests, &c., I examine and compare the organ of speech with those which supply it with matter, and I am never deceived. Talking is regulated (where it exists) by judgment; causality instructs in comparisons of facts, their causes and relations; circumspection and cunning moderate our conversation. You will tell me that mere "common sense" has taught you all this before. Yes; but when common sense coincides with the observations we make on heads, you may then judge of the value and certainty of the truths which result.

Absence.—The absence of this faculty proves the truth of what we have been saying. Those persons in whom the organ is feeble cannot express their ideas; they often repeat the same words, hesitating and waiting, sometimes in vain, for those which are to follow, and if, unfortunately, the love of approbation and timidity exist, they cannot utter a word. Nevertheless these persons know the words they should speak, and when alone can say them very well. Moreover, there are men who write very well, who in public cannot speak. Such was ROUSSEAU; such the famous SIEYES, who is just dead, and of whom there was a notice read at the Institute, containing, among other things, the following passage:—"This man was remarkable in the principal assemblies of the revolution, not for his speeches, but for his writings." He had declared, that not being an orator he could not speak in public. In fact, he never uttered two phrases together in the tribune; and yet he possessed an extraordinary influence in the state. It was a common saying, "that he carried a constitution in his pocket." He was perfectly well acquainted with all the theoretic rules of government,—he had admirable views,—but he never could speak before an assembly. It is a pity that we have not his bust, in order to see whether the difficulty which he experienced in expressing his sentiments depended on the excessive development of the organ of love of approbation, which is the common organ of timidity in our manifestations, and of what is called "shame." It is a point on which we possess a number of facts. ROUSSEAU avowed, publicly, that the timidity which rendered his youth so miserable was owing to the fear of not being able to succeed. You will find an article on *Shame* in the "Encyclopædia," where it is admirably well treated with reference to its influence on all our enterprises. Some persons are timid before women, or great people. Others are so in all society, however small. Shame causes the blood to mount to the face, confounds all the ideas, paralyzes all the faculties; so that in all orders we may observe that self-esteem is much stronger than the want of the esteem of others. No doubt they desire it, but they have the conviction that they are formed to conquer it, and, thanks to the conviction, they are not disconcerted by replies, nor by disapprobation, nor even by hisses.

Our conclusion is, that self-esteem and courage are necessary for orators,—above all, self-esteem. I insist upon this; whilst approbation is the most fearful enemy of the organ of language. When circumspection also exists, as in J. J. ROUSSEAU, the person never will succeed in public speaking, although he may be endowed with the highest faculties and the greatest learning, and possess the talent for writing in a high degree.

Examples.—The organ of speech is well developed in MULLER, author of the "History of Switzerland." In his writings we find great richness of expression, joined to other advantages. But we must take, for example, men who have figured as orators, for we do not know whether this man, who wrote well, also spoke well, and we possess only his mask. Here is MIRABEAU, whose talent as an orator is not to be questioned. You see the organ in him, together with a crowd of auxiliaries, of which I have already spoken. There is VOLTAIRE, who possessed an extreme facility of speaking. You may observe in him the eyes projecting, with all the other faculties which aided that of language. FOY has not the eye so prominent, but the great development of all the high faculties, in the superior part of the forehead, contributes to mask the prominence of the eyes. Remark the size of the orbit. This man had a prodigious facility of speech, but the organ was aided by the most powerful faculties: thus his words had always an extensive signification. Those who have only the organ of speech, with no other superior faculties, can give you plenty of words; but those who have the high faculties, together with instruction, give you the matter. Such was FOY, who had extreme ideality, strong eventuality, and a superior judgment. He had learned a great deal, and had not forgotten any thing. Here is BENJAMIN CONSTANT, a very distinguished orator. He has the opening of the orbit very large, without having the eye projecting or depressed, which confirms any obser-

vation. But in him the organ of speech owes much to the influence of the high faculties developed in the superior part of the forehead. Here is Fox: the eyes are prominent, but many of the auxiliary faculties are wanting in this mask. If I had not made you feel the importance of the concurrence of these high faculties, you would have said, "Be it so for Fox, Mirabeau, and Voltaire; but neither Foy, nor Benjamin Constant, nor Manuel, have prominent eyes." No, Gentlemen, but these orators knew the value of words much better than those who have merely a memory for words, giving them large eyes without expression. In these persons the organ of speech is aided by other powerful organs; in fact, every completely-organised person posseses sufficient language to make himself understood. It is an advantage not to possess a superabundance of words which are not regulated by intelligence; in my social position I am continually exposed to hear people talk. I meet with some persons who delight to hear themselves speak without there being any thing solid in their discourses. Each substantive is surrounded by a number of epithets, or represented by synonymous terms not less multiplied. The accessory ideas are assembled around the principal idea, diminishing the impression which it ought to make, by substituting others which render it useless. A deluge of common-place terms, of phrases more or less sonorous, with which the memory is filled, delights the ears of ignorant persons, without imparting a single new fact. These men appear to be orators, whereas they are nothing; they have no ideas; their oratory is the result of the memory, of the organ of speech, but when assisted by the high faculties the orator supplies facts, and can arouse all your emotions. This is why you do not find large eyes in all orators. The same observation is applicable to Manuel. The organ does not appear to be more developed in him than in any ordinary man; but look at his ideality,—at all his superior organs,—above all, at his judgment. We must also keep in mind the effect of exercising a talent. There is an old adage,—"Nascuntur poetæ, fiunt oratores." One may acquire the talent of speech without having been born with it, because the organ does not act singly. When we exercise it with patience, and place it in relation with the high faculties, it obeys: exercise will do the rest. It is by means of facts and sentiments that we speak, and not merely by means of memory for words; but when that memory is united with high faculties, the oratorical talent rises to the highest degree, unless it be prevented by hame.

Let us sum up what we have said. The faculty, properly so called, manifests itself by the memory of words, without receiving any impulse from the superior faculties; but when the superior faculties are very strong, they overturn all the obstacles which may result from the small degree of activity of the verbal memory. When the other faculties are in action, words are supplied in abundance, and thus eloquence developes itself. It is in this manner that we ought to explain the oratorical talent.

Animals.—Articular language has been refused to animals. Georges Leroy gives it to them, and M. Vimont thinks he is right. According to us, animals do not possess it naturally. Some birds can imitate the accents of man, as the parrot, the magpie, the raven, &c., but they do not use language of their own accord, nor can they supply it by other organs, notwithstanding the advantages which they possess from the organ of the tongue and the larynx. In animals we can only distinguish accents, which vary according to the wants which they wish to express, but never the denominations of objects. Dupont de Nemours says, that the raven, when acting as sentinel for its band, gives a cry at the approach of the sportsman, which signifies, "an armed man!"

But has he proved that this cry would be different if the bird was frightened by any other object than a man with a gun? I do not believe he has. When wolves call each other to their aid, or to divide their prey, do they use sounds which express the names of their objects? The hen, when frightened at the aspect of a bird of prey, calls her young ones together. Does she name the bird? No, certainly. Her accents are graduated according to the degree of terror. Animals have, in general, one cry to express terror; another to call for assistance; another to express despair; another, I believe, to excite compassion; one for joy; another to divide the prey; one, or many, which invite to love. But these modulations are inspired by instincts, acting on the organ of voice, and inspiring the same instincts in those that hear them; and even in man, considering the relation of organization between us. But it is not proved that these animals have certain denominations applicable to each object. That would imply the necessity of learning, while the young chick, just out of its shell, understands the cry of its mother calling it to pick up the grain, as well as it will some weeks later. Animals have only those accents which answer to their wants and instincts; for each instinct there are two accents, one to express that the instinct is satisfied, another to signify that it is not so, that there are obstacles to its gratification, and these accents are graduated according to the intensity of the instinctive emotions. That is their language. Some one may answer, "If animals have accents which answer to their instincts and sentiments, why should they not have others, relating to their intellectual faculties? If you give them the consciousness of objects, why

refuse them the signs which correspond with each of those objects?" Our answer is already given. In that case a compact would be necessary, and an apprenticeship, in order to adapt certain accents to substantives, and we do not observe in them either the one or the other. Do you wish the denominations of bodies to be *innate* in animals, and, consequently, not requiring to be learned? You place them far above man, for man learns the names of objects with great difficulty and labour. Thus, in refusing them the rules of grammar, which, no one will attempt to allege that they know, since those also must be innate, we cannot even point out the existence of vocal signs attached to the objects which are best known to them, such as we observe in children who commence naming different objects. We know that a dog will answer to his name by a sign, but it is because the sound of the name awakens in him certain sentiments and instincts. He is sensible of the act of being fed, and of the caresses of man. It is, then, in feeding and caressing that we pronounce the name which we wish to give him. This word becomes an appeal to his wants, and afterwards he answers to it from habit, no matter for what purpose it is pronounced by man. Dogs retain the name of all objects which are shown to them for a certain number of times, for individuality, depending, perhaps, on form, is in them developed to a great extent; but their communications with each other are carried on by the accents which we have before pointed out, that is, expressing each want as being satisfied, or not satisfied, or disappointed.

It has been held that wolves require an articulate language, in order that one may place himself in ambuscade on the route of the game, while the other drives it from its dwelling. Our hounds do the same thing, without having recourse to noun-substantives, which they do not possess. If two dogs, of different ages or sexes, or of different degrees of strength, hunt together, it is the oldest, the weakest, or the female, which places itself in ambuscade. The stronger dog knows perfectly well what that means, and continues to follow the game until he makes it run over its accustomed circle, and return to the point where he knows that his companion is waiting for it; but this is done by means of a species of barking which does not designate, nominatively, the things, the instincts, or the sentiments. Still more, the dog will do the same thing with regard to the sportsman, and will bring the game to him a second time, should he have missed it at the first trial; and that by means of some cry, or words, on the part of the man, which excites the instinct of the animal, and puts it in unison with his intelligence. The dog does this without any preconcerted language, without having even learned from another dog that the hare, or the fox, will describe a circle before it returns to its form. He has not *imagined* this manœuvre, but he has observed it, and retained the fact in his memory. The scent of the prey has made him run over a circle which he has been in the habit of describing. His instinct, or, rather, a mixture of instinct and the faculty of induction, has traced to him the conduct which he must adopt, in order to make himself master of his prey. In *setting* there is the same operation. The setting dog is carried by his instinct to observe and study his prey. The prey, on the other hand, is made to remain in a state of stupefaction in presence of his enemy, and to observe his slightest movements. The sportsman profits by this immobility of the two animals, to knock down the game, either in a state of repose or at the moment of its flight; if it falls, the dog on his part seizes it. He is then caressed, and gets another sort of meat to recompense him for the sacrifice he makes. This satisfies him, for the dog is eager to please his master above all things; he very soon gets accustomed to this kind of exercise; he no longer watches or sets the game but in the interest of his master and friend; his organisation requires it, and yet he has not received lessons in language founded on the value of substantives. He has heard different words and cries, for each sportsman has his own particular ones, which form a relation with his instincts; his intelligence and habit do the rest.

Why, then, is it required that wolves, foxes, and other hunting animals, require an articulate language in order to execute the same acts that the dog executes so well without these means? It is believed also, that it is by means of an articulate language that the young fox is rendered more cautious when in a country where chase has been given to his species, than in another where they have been allowed to live in peace; this is not at all necessary; it is sufficient that the cry of alarm of the old foxes has made an appeal to the instinct of the young, to render them suspicious and circumspect. It is the same with birds. They observe a silence for a long while, and when they are convinced there is no danger, they become more assured. It is thus that wood-pigeons have established themselves in the trees of the Garden of the Tuileries, and even crows, so suspicious by instinct, have dared to come and make their nests, although there is not food for them there. They know, by long experience, that the crowd which frequents this garden is not hostile to birds. There is here instinct and induction, but certainly not language. M. Vimont places the seat of language in birds above the plate of the orbit, as well as in human beings.

Before terminating this course, it remains for us yet to speak of two superior intellec-

tual faculties. To give you some general ideas of the relation of the faculties among themselves, and to trace for you the fundamental rules, in order to aid you in the application of phrenology, and the exploration of the human head; for, not having made a special study of the heads of animals, I shall send you, respecting them, to consult the work of M. VIMONT.

LECTURE XVIII.

34. COMPARISON.

GENTLEMEN:—The two "superior" faculties, to which I alluded at the close of my last lecture, and to which are attached the ideas of reason and reflection,—in a word, all the phenomena which are supposed to depend on the principle "I," are *comparison* and *causality*. In discussing them, I shall commence with the organ of *comparison*, which GALL designated by the name of the "faculty of comparing." GALL discovered this organ in men who speak, as it were, by comparisons, by parables, and sentences; who employ this method in preference to any other, when they wish to communicate new ideas or theories not easily taken up by their auditory. Instead of reasoning at length, and refuting all objections in detail, they resume their ideas in a single comparison or sentence, which often surprises the belief of the listener, and wins him over to their cause. Such was the primitive idea of the faculty in question.

Situation.—It is situated at the anterior-superior and middle region of the forehead, No. 34; generally below the roots of the hair, when the latter does not descend too low down on the forehead.

Relative Position.—It is placed in front of and below benevolence; below eventuality, and between the two eminences which mark the seat of causality.

Primary Action.—The primary action of this faculty consists in the perception of resemblances or similitudes,—of the analogies which exist between our perceptions, sentiments, instincts, and notions, and, in this respect, is opposed to individuality, which is contented with distinguishing them. In addition to this, it has a tendency to employ comparisons in the expression of its judgment on these phenomena; that is, to explain its thoughts by sentences, or aphorisms, founded on comparisons.

The faculties now under consideration demand our most serious study, for they are the most elevated with which man is endowed. They explain well enough the more inferior ones; but when you arrive at the two organs with which we have been accustomed to judge all the rest, it becomes a matter of great difficulty to submit them to the only species of self-judgment they are capable of. In every perceptive and inferior faculty, we always find a sentiment of resemblance and of difference. Thus, when white and black, blue and green, great and small, hard and soft, &c., are placed in juxta-position, the receptive faculties of the lowest order seize the difference between them. Perception could not exist without distinction of this kind, and hence the faculties of every perceptive organ must embrace a sentiment of resemblance and a sentiment of difference, together with comparison. Comparison, however, in its more comprehensive sense, is placed far above these latter operations. It seizes, in the first place, the difference and resemblance which may exist between the perceptions of different organs,—an operation above the power of the latter, as each is confined to its own series. Thus, for example, the organ of music can only distinguish the difference between true and false tones; the organ of colour can only perceive the resemblance or dissimilitude of colours; the organ of touch can only distinguish between hot and cold, between the different degrees of consistency, and the conditions of rough or smooth surfaces, &c. Their attributes end here; and hence comparison is bounded, in each organ, to the objects of its perception, and cannot be extended to those proper to another organ. The organ of colour can only compare colours, and has no power whatever to perceive their resemblance to, or difference from, sounds. The senses by which we distinguish space do not compare this latter with resistance, in order to arrive at the results of such comparison.

But the organ which now occupies our attention, and which we might denominate "general comparison," is capable of comparing sounds with colours, forms with consistencies, and so on. It exercises itself on the primitive judgment of our perceptions; it is a species of judgment passed on our other judgments, or, if you permit me to employ a metaphor, which will render my meaning more clear, it is a court of chancery which deliberates on the various judgments of minor tribunals, the latter being represented by the receptive organs placed along the lower line of the forehead.

Such is the doctrine of phrenology. You see it will require your undivided attention to follow up these several distinctions. I also told you, that GALL and his followers regarded this faculty as giving a tendency to a figurative mode of speaking for argumentative reasoning. It remains, however, to be decided whether this is a constant effect of the organ, or rather a circumstance depending on its extreme development. Some phrenologists seem inclined to adopt this latter explanation, to which they are in a measure forced, by considering the primitive faculty to consist in a judgment passed on our other judgments. This being supposed, they see no reason why this judgment might

not be as well expressed in simple phraseology as in a sententious and metaphorical language. Cannot we easily say, "Green is an agreeable colour to my sight—sweet things are agreeable to my taste—and whatever is soft pleases my touch?" Is it absolutely necessary to say, "Green is the sugar of my eye,"—"a polished surface is the landscape of my touch?" Certainly not. But we can readily conceive how a person endowed with the faculty of comparison, may conceive it exists equally in his auditor, and thus abridge what he says into the form of metaphor, to avoid the ennui and tediousness of the more ordinary comparative formulæ. This little explanation may enable you to understand why phrenologists say, that when this organ is excessively developed in any individual, he is apt to become unintelligible to his auditory, who find great difficulty in decomposing his metaphors, and reducing them to simple comparisons. As comparisons are sometimes liable to be erroneous, you can also see how men who employ them on every occasion must be very liable to fall into error; and it is this fact which phrenologists would express when they describe these sententious individuals as being more plausible than exact in their inductions, and as often passing off superficial coincidences for perfect resemblances. Such is the phrenological doctrine upon this point. We cannot dismiss it without making a few reflections.

Phrenologists describe general comparison as acting only on the perceptions of different organs, which it compares together. But is this enough? Does it not also act on the signs which represent our faculties? Thus, we represent our faculties by the words love, hate, pride, humility, circumspection, friendship, passion, courage, love of life, love of money, &c. These, assuredly, are quite different from the perceptions of bodies; they are physical phenomena, designed by the several words I have just pronounced. Now, comparison acts upon these different signs, yet phrenologists have omitted mentioning this, at least in an explicit manner. Thus, by means of comparison, we bring together our various faculties, through the medium of the signs representing them, just as if these faculties were so many material substances; and this, because the representative signs of those faculties are at once transformed by the mind into so many realities. I am convinced it was thus you understood these faculties when I described them to you. I appropriated a term or sign to each faculty, and round that sign I assembled, as far as possible, all the functions or operations of the organ. You retained these signs, and realized each faculty in your brain. Now, comparison may be exercised on these signs or words, thus realized, and representing friendship, goodness, avarice, &c. Hence it not only composes the material attributes of bodies, but also the signs of our faculties, and, consequently, our faculties themselves, one with another. I hope I have made myself understood upon this head. But this is not all. General comparison, in comparing our faculties with each other, compares them with concrete subjects, or with bodies properly so called. This is proved by the metaphorical language which this faculty employs, for in its comparisons it introduces good and evil, pride, firmness, circumspection, &c., as so many bodies. It employs the same verbs and the same adverbs to put them in action; the same adjectives to qualify them. All this philosophers are forced to admit, although they deny the consequences I deduce from it. What are those consequences? I conclude that language of this kind erects into substances our faculties and sensations in our loves and our hatreds, which are, in reality, nothing but abstract words representing nervous phenomena. The faculty of comparison forgets this, and treats these phenomena in the same way as it treats the bodies perceived by the organs situated lower down in the forehead. Thus, it says, "This is a fine, a clear, an obscure idea; this love is pure; this character is sour, this other mild and flexible; this raillery is bitter, this irony mild," &c. Now, let me ask, what expressions are these? They are epithets which represent the attributes of bodies as perceived by our senses, for obscure, pure, sour, &c., are sensitive qualities of bodies, and nothing else. Now, to what does comparison attribute these qualities? To the signs of moral phenomena, and consequently to the phenomena themselves; hence it is perpetually acting. This is the point which philosophers are unwilling to admit, or at least if they do admit it they say that what we call moral phenomena are a species of substances. But what species? It is impossible for them to define them as substances, as we have seen; they, therefore, define them as bodies, confound or distinguish them as they can, divide them into several beings, or condense them, according to their caprice, into a single being, or entity, and finish by speaking a language which no one can understand.

It is through this arbitrary and vicious method that the faculty we speak of is led to employ a metaphorical and sententious mode of speaking. Hence you can understand how it frequently compares a moral object with a body, or concrete substance. However, the basis of its operations consists in the phenomenon of comparison applied to the abstract as well as to the concrete; in other words, to our sentiments and instincts, as well as to our perceptions. We are now led to the examination of a question which might appear to be accessory, but which is indispensable in the position we now occupy. I have spoken of abstractiveness. The word

abstraction does not sound well in the ears of those who have paid but little attention to philosophy, and, unfortunately, the study of philosophy forms no part of instruction in our colleges at the present day; this science when attended to at all, is studied too late, and our young men who are destined to cultivate practical sciences, such as chemistry, medicine, or natural history, &c., are too fond of considering philosophy as an useless branch of education, or only study it in a very superficial manner, at a later period of life, when they have become initiated in knowledge exclusively of a physical nature, and are too apt to throw ridicule on every thing that is abstract, for the simple reason that they are ignorant of the signification of the word. Notwithstanding the little favour with which abstract knowledge is thus regarded, it is so eminently connected with society, that we cannot produce a single idea without abstraction; it is therefore important that I should say a few words on this subject.

Phrenological Origin and Formation of Abstract Ideas.—What is the faculty which abstracts? Remark, in the first place, the origin of the term; "abstrahere," to take away, to separate. Some phrenologists answer our question by saying, "Individuality is the abstracting faculty." Individuality forms beings, notions, and ideas, with the attributes communicated to the perceptive faculties, and thus creates bodies by a reunion of attributes. Let us discover this proposition.

Here is a plaster cast. What are the attributes which constitute it? A white colour, firm consistence, rounded form, with certain eminences and inequalities; plaster for the material; a temperature similar to that of the surrounding medium, a certain resemblance with the human face, &c.: these different attributes being assembled together, you say "This is a plaster head." But before you thought of enumerating all these attributes you said, "Here is a body," and you thus distinguished it from all surrounding ones. Now, the first distinction is what is commonly attributed to individuality, and it was not the organ, just mentioned, which abstracted the attributes composing this head; it distinguished it as an object different from every other one, and nothing more. Hence, if we would erect individuality into an organ of abstraction, it can only be so in so far as it abstracts one body from all others, and not because it abstracts the different attributes of those bodies, because we possess special perceptive organs destined to seize each of these attributes. If, on the other hand, it is said, that by comparing this head with others, individuality makes the abstraction of *substance*, I answer—You give it a function as foreign to it as the preceding one, and shew this by other examples. Thus, you take the heads now lying before me, and compare them with this table, with the lustre, with the ceiling, with every thing, in fine, that you see about us. You say these different objects possess one property in common, and that is substance; there is a material substance which is capable of forming at one time a hand, at another a lustre, at another a jug, a bit of paper, a table, and in this manner you create the abstraction, *substance*; all this, Gentlemen, is a work of synthesis; how then can we admit that it is produced by an organ which has a constant tendency to analyze? If thus the essence of individuality be to separate, independently of attributes, how can we imagine that the same faculty makes great collective abstractions, assembles for example, 60,000 men, to create the idea of an army, or 2,620,000,000 men to make a nation. These two operations are not only distinct, but opposite, and we cannot admit their co-existence in the same organ. From what has been said, you may perceive I differ altogether from those phrenologists who consider the faculty of abstraction as depending on individuality.

If the primitive or partial abstractions are made by each faculty in particular, and if the more comprehensive abstractions do not depend on individuality, to what are we to attribute them? I believe we should refer them to the organs situate at the superior region of the forehead. We find only two in this region, comparison and causality. Does comparison produce abstract ideas? But before entering on this question, let us examine the various applications of which our faculty is capable.

Applications.—Use of this faculty is chiefly made by orators and preachers, who frequently employ comparison and parables, who discover numerous similitudes and analogies between different things. Writers mention as an example, (for examples are precious, and abstract metaphysics, which never exhibits an example, is adapted to a very small number of capacities, and totally useless,) the holy scriptures, which contain such a number of aphorisms and parables; these certainly present the most striking example we could select. The work just mentioned has reduced nearly the whole moral code to parables, as in that of the prodigal child, the rich man, &c. The same tendency may be observed in all the Oriental languages, in the Hindostanee tongue, &c.; and it has been found that the organ of comparison is more strongly marked than that of causality in the inhabitants of Hindostan. Another example is furnished by poetry, for poets often speak in figures and metaphors, by which they compare objects that are frequently very different from one another. We have already made this observation while treating of ideality, when

we demonstrated that the poetic talent did not consist in the realisation of abstract ideas, though it employed ideality as a means. Such realisations seems to us rather a result of the organ we now study, for in reality it is nothing else than simple comparison. Hence, if the organ does not abstract, it is at least certain that it realises, abstract ideas. Let us select a few examples, which will prove that all these realisations are merely comparisons, and let us carry in mind that wherever a comparison is made between an abstract and a concrete idea, the attributes given to the former are invariably borrowed from the latter. Here are examples in abundance: A good idea,—to what does goodness really belong? To a physical body. A soft passion,—to what does softness belong? To an object of touch. A rough character,—of what is roughness an attribute, unless of a body? A barbarous conduct,—barbarity can only belong to the man who does the mischief. It is thus that we make comparisons, by bringing together material bodies and the signs of things that are not material, with the signs of our ideas, passions, and sentiments, which we treat as bodies. I should never have done were I to expose the various illustrations to which this point is susceptible, and I cannot but feel astonishment at the little impression it has made on the present generation. What do poets do in their dramatic or epic works; in their epilogues, fables, &c.? They personify virtue, courage, idleness, &c. Look at the portrait of "idleness" in BOILEAU; that of "envy" in OVID. They are nothing but comparisons.

"—— Livent rubigine dentes."

Her teeth are yellow, her whole body is emaciated. Examine the various portraits of the passions drawn by the most celebrated poets, and you will find their images, which at bottom are nothing more than cerebral phenomena, composed entirely of the attributes of bodies. It is impossible to deny this fact if we examine it seriously, or not to perceive that the comparisons which exist in figurative language are derived from a comparison of nervous phenomena. It is by the aid of comparison, taken in this sense, that poets communicate a species of life, with all its characteristic thoughts and sentiments, to inert and inanimate objects, to the rocks, the plains, and the whole face of nature. This organ is active in individuals of aphoretic and proverbial language, who decide all questions by comparisons and similes, instead of demonstration. The remark, "Life is a journey," presents a comparison. "Soldiers! From the summit of these pyramids forty centuries look down upon you."* These words represent centuries as so many individuals. "The word *honour* will always find an echo in France." This comparison, which seems to transform the head of every Frenchman into an insensible arch, is nevertheless a very beautiful one, from the number of sentiments which it embraces. It is rare to find similes founded on the deterioration of objects, so successful as those which tend to elevate the object of comparison. "Silence is the lesson of kings." Here again you find one of those sentences more eloquent than any demonstration, while at the bottom you may perceive a comparison depending on the exercise of the faculty we now study. When a style is perfectly sententious, and abounding in similes, it becomes unintelligible to the multitude, who are unable to follow it, for what they understand best is a number of material objects arranged in clear order and submitted to their judgment as soon as they present themselves. A writer or an orator of this kind is soon laid aside; people say, "He is an extraordinary man, but he is too abstract, and difficult to be understood." You will find, however, whole works written in the style we now speak of; when you have read three or four pages you are generally obliged to lay the work aside, for you are compelled to decompose every phrase, and spend more trouble in decyphering the figurative language, than if the book were written in a dead tongue. Phrases introduced happily, have an excellent effect; but when employed with profusion they dazzle and fatigue the mind, and are, besides, a weak method of instruction, for the greater number of comparisons made is false. Hence phrenologists are accustomed to say, that individuals in whom this faculty *predominates* are more specious than trustworthy, more plausible than exact.

Auxiliaries.—These are, first, all the perceptive faculties, which furnish it with materials drawn from the external world. Secondly, the faculty of language, and the signs which it employs. Thirdly, the instructive faculties and sentiments, in which comparison acts through the signs representing them,—forgetting often on what the signs are founded, and looking on it, as I said before, in the light of a material body.

Amongst the auxiliaries we must also count ideality, from which it borrows its most vivid colours; and gaiety, which lends it sophisms, for this latter sentiment frequently turns away the attention from the principal question, and amuses itself with the subordinate points.

Antagonists.—Causality seems to be the principal antagonist of comparison, yet both faculties are necessary, each to the other. It is certain that when the sentiment which detects the relation between cause and effect is false, the faculty of comparison is proportionably affected. It is also equally

* The celebrated address of Buonaparte to his army in Egypt.

clear, that whenever the sentiment of causes and relations is strongly felt, the individual is rarely apt to make false comparisons.

Examples.—PITT has been cited as an example, and you may see, in fact, that the organ of comparison is here fully developed; GALL, SPURZHEIM, BENJAMIN CONSTANT, and all men of high intellectual faculties present well marked examples of this organ, for it rarely exists alone. We also find examples in the heads of MANUEL, and of CASIMIR PERIER, a man celebrated for his facility of comparison; the organ forms here a considerable prominence. MIRABEAU had also this part of the forehead fully developed; in a word, all great, finely-formed heads furnish examples of the organ. It is not the existence of a single faculty that renders a man great. In DUPUYTREN'S head you may remark how the whole upper part of the forehead, on either side the median line, is thrown out by the organ of comparison, without which the judgment must be feeble. It is only when in excess, or imperfectly seconded by the other organs, that comparison is apt to fall into the aberrations I have pointed out, for it requires to be supported by well developed organs of relation and causality. Here is the head of SESTINI, a celebrated improvisator; see how finely the organ is here developed! The poets, above all others, require an abundance of this faculty; you will see it well marked in NAPOLEON'S head; in fact, you cannot find a single well-formed head in which this faculty is not fully developed. As for the negative examples, we will find them in the heads of those criminals who have already furnished examples of the absence of the higher sentiments and faculties. I might quote them in numbers, for comparison is the basis of judgment, and this latter faculty, as every body knows, is frequently weak in abandoned men, at least in their application of it. The Hindoos are mentioned as having this faculty more developed than that of causality.

Animals.—GALL denies the existence of this faculty in animals. M. VIMONT, on the contrary, recognizes it in the dog, ourang-outang, and bear. Gentlemen, although the name of bear is familiarly used as an injurious epithet, this animal really possesses several faculties, and is well worth attention. You may study his habits any day at the Jardin de Plantes, and you cannot fail to observe actions dictated by a certain portion of judgment; the bear is a very adroit animal, and presents a pretty considerable development of the anterior portion of the brain. With respect to the faculty now under consideration, the ourang-outang must be placed at the summit of the animal scale. We must, however, wait for further observations upon this point, which, fortunately, the presence of an animal of this species at the Garden of Plants cannot fail to produce. GEOFFRY SAINT-HILAIRE has already announced to the Institute, that it should be arranged in a species, especially created for the purpose, between the monkey tribe and man. It is to this faculty that M. VIMONT attaches the superiority of dogs over most other animals; the truth is, that dogs are excellent observers, they understand the meaning of every act and gesture of the persons with whom they are accustomed to live; this supposes some power of comparison; but unhappily they are deprived of the faculty of language to manifest the workings of this organ.

35.—CAUSALITY.

Let us now pass to the second superior intellectual faculty, which consists in the "philosophical talent" of GALL, or in *causality*.

Situation.—It is placed at the upper part of the forehead. On either side of the preceding faculty are seated two convolutions, running from below upwards, which are regarded as the organs of causality. On the inner side it touches comparison; on the outer side, gaiety. Its upper edge corresponds with the organ of mimicry, and its lower is in contact with the organ of time. It is marked with the number 35, the last faculty in phrenology. Comparison throws out the superior and middle portions of the forehead, while causality gives them a degree of breadth. However, if gaiety happens to be well developed, it broadens the forehead also, as you have seen. Mimicry and marvellousness give breadth to the inferior plan of the forehead, but our organ is seated much higher up. You should remember all these peculiarities, for they are useful to guide you in fixing the seat of the organ.

Primitive Action.—This consists in the perception of the relation between cause and effect. Comparison, as you have been told, seizes the general relations between objects; but causality ascends beyond juxtaposition and relations; it penetrates the manner in which effects and their causes are connected together; it seizes the action of one body on another, and traces the result of this action. This intellectual operation is peculiar to causality, and extends to no other faculty of the mind. Unless you have this organ well developed, your ideas of causes and their effects will ever remain limited. Every faculty desires to be satisfied by exercise; hence causality communicates an incessant tendency to curiosity, and stimulates man to demand on every occasion the "propter" of every thing that exists or occurs. Causality is well marked in children, and, if it were cultivated, would not afterwards disappear as we so frequently see it does. Formerly, instead of exercising the organ of cause in our schools, attention was almost exclusively directed to the

memory of words. Happily, we now commence bringing eventuality into action; it is a step in advance, and causality must benefit by the change. "Felix, qui potuit rerum cognoscere causas," said the poet. The desire of fathoming causes is a species of torment in the minds of men who have this faculty predominant. They are pensive, and constantly wrapped up in reflection; they are perpetually in search of causes, and bring you at every instant to the main question occupying their thoughts, that of the "wherefore." This faculty, if even moderately satisfied, produces induction. Comparison places facts in juxta-position, when the faculty we now speak of draws conclusions, and often arrives at induction. Men in whom this faculty is feeble, or perhaps altogether wanting, see nothing but simple juxta-positions when a body, an idea, or a notion, are placed side by side with another body, another idea, or another notion; they never feel the reciprocal action of the one or the other. Hence causality is a kind of intellectual generation; it crowns the work of judgment by impregnating the acts of comparison. But perhaps some one may say, "All this is mere speculation, a study-dream." Gentlemen, phrenology is founded upon facts, and not upon speculations. It has been remarked, that men in whom the organs corresponding with causality and comparison were strong, compared things together, and passed correct judgments, by seizing with accuracy the connections of cause and effect. It has been observed, that when the organ of comparison was alone dominant, men had a strong tendency to compare things, but were unable to discover the relations between cause and effect. Finally, it has been remarked, that when the organ of causality is very strong, without a corresponding development of comparison, the individual, pressed forward by the love of discovering causes, more frequently indicates false than true ones. What more do you want? It is in this manner that the science of phrenology has been created. A discovery of so great importance could never have been made in the study, by interrogating the conscience, or by transforming one notion into another, through the artifices of logic. It was necessary to compare thousands of facts, and thousands of brains, to arrive at the conclusions which phrenologists have drawn. This is far from being a system which consists in nothing but so many lines and numbers; it is the fruit of long and painful observation. Without the faculty of causality we should merely perceive the resemblance or dissimilarity between things, without drawing any conclusion or induction with respect to the manner in which things are produced. Man could perceive no movement or transformation effected under reciprocal influences; he would discover nothing but existences; and, never observing how these existences are produced, or why, he would not be able to reproduce them at will. Like inferior animals, he might provoke the production of things without feeling it, but could never employ this circumstance in the amelioration of his condition in life. The sentiment of causality is, therefore, necessary to our well-being; but, unfortunately, it is feebly developed in a great number of individuals, and hence the progress of science is so slow. The organs of perception are usually well developed; comparison is seldom wanting, but when the faculty of causality is much more rare, the rest remain, as it were, barren in its absence. In other cases it is imperfectly supported, on account of the feebleness of the perceptions, and hence is led to the indication of causes altogether illusory. This gives rise to the triumph of the enemies of this important faculty—individuals merely fit to compare or establish a fact, without ascending to its cause. Sceptics, &c., all attack it, partly because they do not feel its influence within themselves, and partly because the faculty is apt to fall into errors of a manifest nature.

The sceptics, who often possess a multitude of facts, which they compare with one another, but without drawing any conclusions, pretend that we should, above all things, guard ourselves against the illusion of causes, or imaginary explanations. They avoid admitting, in the explanation of causes and effects, a correct measure of appreciation, because they can feel no trace of this model in themselves; hence they deny its existence, and their amour-propre converts this negation into a law.

This is a serious obstacle to the progress of science, which can never be satisfactory unless combined with an explanation of cause and effect, so far as man is permitted to explain them. However, it requires a complete development of the intellectual organs, and an absence of certain tendencies, to enable us to seize freely the relations of cause and effect, and acknowledge the reception of truth. Thus, when one of our adversaries wrote me, at the commencement of the course, "I have the forehead well developed, and I find it impossible to admit the truth of phrenology, although I have studied and observed a great deal," I might have answered, "You possess, without doubt, the organ of comparison, perhaps also the organ of causality; but are your perceptive faculties strong, or have you too much caution and cunning to avow openly what you feel?" But to resume. The faculty now under consideration fecundates the perception of every receptive organ. This is the fundamental point. It also fecundates the operations of comparison, and in this way contributes to the progress of science, as you shall presently see in its applications.

Application.—This faculty is constantly applied to chemistry, to every branch of na-

tural philosophy and natural history, to geology, to botany, to vegetable physiology, to animal physiology, to comparative anatomy, &c. It, and it alone, contributes to the advancement of these sciences. An individual endowed with nothing else than perceptions and general comparison, observes, but never concludes. His works are dry and lifeless, and only become useful at some future time, when a genius appears capable of fecundating them by the contact of causality, and deriving inductions which become a source of fresh progress and advancement.

In logic our organ discovers a multitude of facts, before unnoticed, in the facts which are enunciated. The former, again, reveal a new series, &c., and hence the saying of CABDILLAC, "that the sciences are nothing but a well-constructed language." He thought that all human science was comprised in the language of the day. "A body is heavy;" this evidently means it will fall unless it be sustained, and so on. But this is not all; for logic is applicable to words representing facts. Now, the facts are multiplied at every minute, whenever we apply ourselves to the study of nature, instead of confining our attention to books. Thus, logic, guided by the faculty of causality, is forced to exercise itself on new facts, through the medium of the words by which they are represented, and hence derives inductions that never could be drawn from mere antiquated words.

You may perceive, from what has been said, that our faculty plays an important part in logic, properly so called, as well as in the observation of natural facts. It connects those facts together, through the reciprocal action of production. In metaphysics it turns in on itself, as the phrase runs; acts on its own inductions, and ascends from cause to cause, from power to power, from agent to agent, until it arrives at a primitive force, and induces the idea of a divinity. It perceives, in the first instance, a cause, but that cause is only the effect of some other. You discover the other cause, but that is not sufficient, for causality says, "I feel that this is not the primitive cause," and thus it ascends until arrested by a primitive force. Philosophers usually illustrate this in the following manner:—From one ball displaced by another we trace the cause to the arm which gave the impulse, from the arm to the brain, from the brain to the intelligence, from the intelligence to the causes which set it in action, from those causes to the causes which produced them, and so on, step by step, to a single cause above all. Thus, metaphysics appears to be nothing but an observation of natural phenomena, fecundated by causality. It consists in a proper application of induction to the facts of cerebral action, for metaphysics only occupies itself with the brain, when in action to perceive, or to produce, the phenomena of instinct, of sentiment, or of reflection. The term is, therefore, faulty; and henceforward the science should be denominated "mental philosophy." We shall presently see how man has been led to consider the science in a different light. But let us return to the idea of a divinity.

Beyond all doubt, we owe the idea of GOD to the faculty of causality, for it is impossible for us to arrest its progress before it has arrived at this its ultimate term. When the intellectual faculties have contemplated the enchainment of cause and effect, they conclude, in spite of us, the existence of a primary agent or power. Thus, it is not veneration which produces this idea, or, more properly speaking, this notion, of a GOD; and we agree with SPURZHEIM in thinking that GALL'S views were too superficial when he attributed it to veneration, which he denominated "theosophy." We have said that GOD is not represented by any idea, but revealed by a sentiment which converts his existence into a notion. In fact, none of the perceptive faculties seated in the lower range of the forehead are capable of seizing this notion, and our intelligence could not apply the attributes of material bodies to such a being without degrading him. We obtain the notion by induction; and, when once found, a sentiment becomes developed which compels us to admit it, and regard it as a fact. It is thus that GOD becomes a notion, or, in other words, a fact which we know; for the notion of a divinity is really contained in the facts revealed to us by our perceptive faculties. A similar process of reasoning is applicable to *substance*, for the latter alone is not submitted to the senses. Our perceptive faculties are only capable of seizing the attributes of bodies; but as these attributes change (as causality teaches us) without the body ceasing to be a body, our inductive faculty compels us to designate them by a sign common to all the forms which they assume. In this way, borrowing our expressions from the changes or juxta-position of bodies which we see move, or transform themselves in the most evident manner, we adopt the term "matter" to designate a body in general, and the word *substance* (something standing underneath) to express the fact that matter is concealed under the various forms that bodies present themselves in, although our senses can only seize it in the shape of an attribute, such as black, white, hard, soft, liquid, odorous, moveable, immoveable, silentious, noisy, &c. Thus we find that bodies convey the general notion of matter or substance, which we consider as the cause of, or at least a condition necessary to, the different forms they assume; and it is to causality that we owe this fact. It is this faculty, then, which produces the great abstraction "substance," and not comparison, —a faculty barren in its nature, as it simply points out without producing any thing.

There is another question which merits

attention, viz., Is the great abstraction "infinity," equally derived from the organ of causality? We apply our conception of infinity, 1st, to space or time; 2nd, to force, power, or intelligence. However, as the second species of infinite is only applied to the Supreme Being, and cannot be defined, we shall not speak of it at any length. It is absurd to engage ourselves in the discussion of pure hypotheses; for what limits can we set to the attributes of a notion so totally distinct from those of matter? Yet, in reality, we could only clothe the Divinity with our own limited orders of cerebral faculties, with our internal functions, and our limbs as agents of those faculties, affirming all the while that this is mere figure, and that the Divinity possesses none of the attributes we are perpetually lending him. Let us leave, then, this method to the priests, (who think it necessary to guide the people), and turn to infinity as applied to space and time. We comprehend space, as far as the range of our sight, which is much more extensive than that of touch, permits us. When arrived at this natural term, we imagine a space still more extensive, and we add it to the former; we repeat this operation a certain number of times, but we soon get fatigued with the addition; that is to say, with superadding to the space measured by the eye another portion of space *made on the same model*. We now employ the word infinite, and this term expresses the impossibility we experience of continuing our additions with any chance of arriving at a conclusion. What is the consequence? A painful sentiment, arising from an unsatiated desire, and the necessity of directing our observation towards other objects. The same observation is applicable to duration. When we say the world has always existed, and will exist for ever, we make a simple assertion, without any proof, towards which we are impelled by an undefinable spirit of belief, similar to that which produces the notion of a GOD. We might say the same of numbers, of greatness, smallness, division and subdivision of matter, down to what we call atoms; for who can affirm that an atom, in the common sense of the word, is indivisible? Philosophers say, that when they have reached the utmost limit of division in material things, they find beyond that a simple being, and discover the immaterial principle; but if you ask them for an idea of this simple being, they at once borrow its attributes from matter. Now, if the "spirit" of metaphysicians be nothing but matter deprived of its true title to take that of spirit, we can see no reason for separating it from matter, properly so called; and the spirit of metaphysicians becomes nothing else than a sign, representing an hypothesis, which obstinately refuses every attribute you may offer it, since the latter belongs exclusively to matter.

Our opponents will, doubtless, answer,—"In refusing to clothe spirit with the attributes of matter, you separate it from the latter, and, consequently, admit its existence." To this I reply, This term exists in almost every language; we should, therefore, endeavour to determine its value. Now, in my judgment, it merely designs a negative conception, which admits of no attribute, and, consequently, which no one can bring into action; for the only things capable of acting are those which have attributes, that is to say, bodies. Do you wish me to express myself in different terms? The sign "spirit" represents a phenomenon of cerebral action, produced by our perceptions, general comparison, and reflexion. But it may be said, "You, then, place *spirit* on the same level with the great abstractions, duration and infinity." Certainly not. I find myself compelled to admit these great abstractions, since I find them in the bodies before me, and hence I call them notions; while, on the contrary, I find "spirit" nowhere,—nothing, absolutely nothing which compels me to believe in its existence. But the same opponents may now change ground, and say, "What if we please to give the name 'spirit' to the cause, force, or power which you admit?" In this case, I reply, Your spirit no longer becomes the subdivision of an atom pushed *ad infinitum*. At all events, it remains a notion, to which we cannot attach a single attribute, and which, consequently, you can never bring into action. "How, then, do you represent cause, force, power, or active things?" answer our obstinate opponents. The reply is easy,—When I bring cause or force into action, I simply describe the action of one body upon another. The irrefragible proof of this is, that I might describe the same facts attributed to these abstractions, without ever mentioning the latter, and, at the same time, without omitting a single particular connected with the facts. Thus, for example, the present course, during which our different faculties have been brought into action, as so many causes or powers, might have been delivered with as great advantage without my ever having mentioned a single word about such entities. The abstract term serves as a kind of logical lever, which brings the concrete body into action, but can never create a realization, either in chemistry, physics, natural history, or physiology. I may say, "When the rays of light, and the emanations of a substance fit for my food, have reached my eyes and nose, my brain is at the same time affected in a particular region, and I feel a desire to eat it." But I might as well say, "The aspect and smell of food excite my organ and instinct of alimentiveness." Instead of saying, "The organ of self-esteem inspires pride and disdain," I might say, "When a certain region of the brain is large, a man esteems himself much, and underrates his neighbour." There is not a single fact

which may not be described in both these ways; at one time, by bringing forward causes or forces; at another, without pronouncing a word about them, but simply by enumerating what passes in the bodies whose actions we observe. This latter method, it is true, is long, tedious, and exposes us to repetitions, while the former is animated, picturesque, and more agreeable to both speaker and auditor; but it changes nothing in the nature of things, and can afford no proof in support of the idea that force, power, cause, &c., are realities. No man of sense can see any thing in these terms beyond so many formulæ.

But to return to our organ. The idea we fancy we have of infinity, is evidently derived from finite spaces, which we transport beyond their natural limits by an internal movement of induction. Infinites, then, are produced by the organ of causality, which, as we have already shown, creates the abstractions, cause, power, and force; hence it supplies us with all the grand abstract terms employed in the language of philosophers.

I here seek to point out the limits of the human intelligence; and, in fact, we cannot hope to ascend beyond the organ we now study, since it is the most noble one with which man is endowed; but it operates with signs, like all the rest. When it wishes to ascend beyond the attributes of bodies furnished by the inferior range of organs, it quits them, and acts on the instincts, or sentiments; but in this latter operation it is forced to call in the assistance of comparison, which transforms our instincts and sentiments into so many entities, by clothing them with the attributes of bodies, and thus enables causality to act on them much more freely than if they remained what they really are, cerebral phenomena. The organ of causality also finds an application in all the natural sciences, as, indeed, you may conclude from what has been just said. Medicine is a branch of the natural sciences, and men in whom this organ is weak, observe diseases and their symptoms without being able to seize the relation of cause and effect, by which they are connected with external agents. It is in vain that you lay principles before such physicians; they understand nothing beyond empiricism and expedients.

Causality is exercised in all the actions of man; in morality it explains his conduct; and if the observer does not possess this faculty, he can neither explain the motives of human conduct, nor benefit by the examples before him. A man endowed with a feeble share of causality reacts insidiously, and often to his own disadvantage, against those who wish him well, or ill; and the other faculties, however developed they may be, can rarely supply this defect. We frequently hear it said, that men whose conduct is extraordinary, or foolish, have little judgment; but, in most of these cases, it is a want of causality which delivers them, without guide or defence, to the influence of their instincts and sentiments. The heads of the various criminals which you have seen furnish a proof of this. Causality is also employed in the various works of manual labour,—in mechanics, for example. Indeed, I should have said it is there that it first exercises itself. When children, we constantly see the action of causality, and are sensibly struck by its phenomena; thus, I take up this head before me, and I feel that I am the cause of its removal from the table. I push this body; it falls down;—I feel I am the cause of its fall. But the products of the different arts and manufactures, of literature, &c., make a still more powerful impression on the mind of young persons, and develop a sentiment of causality, force, and power, which is seldom if ever effaced. Such is the education of the faculty now under consideration. The relation of cause and effect, in mechanics at least, is commonly perceived and acknowledged by every body,—a fact that proves causality is never entirely wanting, unless, indeed, the individual is born an idiot; but, in proportion as we remove from the more gross and palpable effects of muscular action, the faculty acts with less facility. In natural philosophy, in chemistry, it continues to act; but once arrived at physiology, the difficulties multiply, and man is forced to call in the aid of his other superior faculties, either to second causality, if it be feeble, or correct it when too powerful, and badly served by other organs.

In political economy and practical economy it exercises the same function that it does in morality. It lays before us the relation of cause and effect, and, when properly aided by other faculties, suggests the best method of ameliorating the productions of nature and reforming abuses. As it perceives the causes which produce abuse, so it can easily foresee the causes best calculated to remove them, and hence becomes the origin of the faculty of provision. It is causality, seconded by benevolence, which has latterly commenced the immense labours undertaken with a view of ameliorating our penitentiary and prison systems, and which agitated the great question of the abolition of death.

Finally, to cite an example which interests ourselves in particular, causality is applicable to an analysis of the faculties of man and animals. It points out the relation of cause and effect between the organization of the brain and the actions of living beings; that is to say, it plays a prominent part in every kind of physiology, whether instinctive, sentimental, or intellectual, and particularly in phrenology, for henceforwards this science constitutes the only intellectual physiology of the brain. Causality, then, is an organ extremely useful to the phre-

nologist; indeed, no one should pretend to profess this science without having exercised it in a powerful manner.

Absence.—The want of this organ does not prevent a person from observing and comparing, or even from making some of the less important abstractions, for, as you have already seen, each faculty makes its own comparisons, passes its own judgments, and creates abstracts; but all this is confined to the immediate objects of the organ. Even when feeble, causality is still able to seize the great abstractions which are presented to it, though it could not have created them itself; however, when we desire to force it to constant exercise on the various objects of nature, it refuses, and the fruits of our perception become associated with other faculties. Causality is then thrown in the background, and every sentiment of the kind may at length disappear, and complete scepticism arise in its place, under the influence of a false method of reasoning. These persons affect to consider all the great systems of philosophy, of moral and political economy, founded on the perception of cause and effect, as so many empty theories; they look on men of superior genius as visionaries, fools, or, if they are inclined to be charitable, as utopists. A few of these sophists, Gentlemen, possess a great number of facts, for though causality be feeble, the individual may have the whole inferior range of organs well developed; he may likewise possess a large share of language and imagination; in such case you are overwhelmed with a mass of facts which prove for and against the cause he wishes to attack; you are bewildered with sophisms and false conclusions, which it is difficult for our young men to refute, from want of experience and observation; the mind is turned away from the grand and comprehensive views based on causality, and, finally, is attached to the cause of error by the sentiment of *amour-propre*, which ever impels us to sustain assertions that we have once adopted.

The truths which I have just advanced to you, Gentlemen, are of the highest importance, because you will always find a majority of cunning, though eloquent and ambitious men in our corporate scientific bodies, to which one can seldom gain access without sacrificing his convictions to the interests of a coterie, and accommodating his language, his quotations, and even his facts, to the prevailing whim of the day. Hume, Berkley, and Malebranche, men of learning and subtle discussion, the chiefs of the eclectic school, were doubtless seduced by the realization of abstract ideas; however, we have some reason to suspect that their cerebral organization presented more comparison than causality, especially in the two latter, who were very religious men; for comparison disposes one to belief. We owe, then, a great deal to phrenology, for having localized a faculty which pla so important a part in the discovery of new truths, and whose imperfect development, or absence, is productive of the greatest obstacles to the progress of science.

Auxiliaries.—The organ of causality is aided by all the receptive organs, on whose productions it operates. The proof of this is, that when they are feeble, we feel a total dislike to study; the organ cannot dispense with the attributes of bodies and individualities; for how can it judge without materials? It may even be very well developed without a single material to work upon; but as phrenology shows that all the organs are independent each of the other, what happens in that case? The organ will act on mere signs, and, associating to itself marvellousness and ideality, create a world of chimeras. Thus it fills society with dreamers, with men whose conceptions are so abstract, that no man of well-organized mind can follow them without disgust. But you may ask "How does this happen?" Phrenologists content themselves with answering, "Whenever the organ of causality is highly developed, and at the same time there are no facts for it to work upon, then the individual loses himself in the clouds, and creates a system of chimeras." For my own part I would add, that in the case just alluded to, men operate upon mere signs; that is to say, upon words representing either bodies with which they are not sufficiently acquainted, or on the human faculties, of which they have acquired false notions, and that because their perceptions are feeble. Hence it results that a man who is endowed with excellent perceptive faculties may fall into error as well as individuals in whom those faculties are feeble, whenever his thoughts are turned away from things to signs, through the effect of education and example. In one case, however, he may, and can, correct his errors; in the former they are inevitable.

Certain individuals, no doubt for the purpose of amusing themselves, have publicly pretended that I was unacquainted with the meaning of the term "ontology," a term which they have invented for the system just explained to you. But nothing seems more easy—ontology is *the science of the being*. But what is a *being*, according as psychologists use the word, deprived of every sensitive attribute? How can we examine a being, (or, when you come to divide it, several beings,) to which you can never apply the attributes of matter without destroying its nature, viz., that of an abstract, immaterial thing? This you may say is impossible; yet it is done every day; the verbs and adjectives which serve to qualify and bring bodies into action, are applied to these abstractions by people who, at the very time they make such application,

assure you that they speak of any thing but a body. Certain abstracts are necessary, as you have already seen; but these represent bodies, and are not in question now. Whenever an abstract term *represents* a body, it may receive an epithet, and become the subject or object of a verb, but when abstracts are mere conceptions of the imagination they can never be treated as bodies. Yet this is the system pursued by the ontologists; it is thus they build chimeras with signs and words transformed into bodies. They act on these images, as on realities, and lead you to paradise, or hell, amongst the angels, or the spirits of the condemned. Why do the works of these people disgust us? Because we find their imaginary world peopled with personages exactly similar in all things to those we are accustomed to see in this world below, while they, on the contrary, assure us they present nothing material. We discover the falsehood, and turn away in disgust from its fabricators. This, Gentlemen, is the whole secret of the ontological system which has so long dazzled weak minds, and even such of stronger mould as were not fortunate enough to detect the artifice; but if once the trickery is known and exposed, every one will regard it as a merit to tear the veil from such audacious charlatanism. This doctrine is the purest of metaphysics, for the chimerical *beings* of ontology carried to its maximum, are on the same line with angels, devils, sylphs, gnomes, and hobgoblins. What difference, in fact, can we find? In fact, what difference is there between these factitious personages and the "images" of PLATO, the "species," or "categories," of ARISTOTLE, the "vortices" of DESCARTES, and the "monades" of LEIBNITZ. Have not all these been connected by the adjectives and verbs which are commonly used to designate the attributes and actions of the most highly material bodies?

To resume the auxiliaries of this faculty. In the first line are the receptive organs; language, inasmuch as it furnishes the signs upon which causality operates; comparison and circumspection, because it requires time and space for its operations.

Antagonists.—The antagonists of causality may be distinguished into two orders; one comprehending such faculties as are calculated to lead it astray; for example, ideality and marvellousness, veneration, pride, benevolence, destructiveness, in a word, all the instincts and sentiments. Metaphysicians, whether sacred or profane, are very often men of strong passions. The second order of antagonists includes all faculties which oppose its action, by absorbing to themselves a great share of the nervous energy,—the various gay passions, music, ideality, marvellousness; for even when these faculties fail to lead causality astray, they oppose the profound meditation necessary for its development. This is particularly the case with ideality, as applied to the arts, for the attention is then fixed on material objects, and artists never pretend to give, as real, the causes which they appear to bring into action; they are seldom thinkers. Poets and orators might be included in the same category, for they adopt fictitious causes, rather as a means of producing effect, than as agents susceptible of action. Veneration must also be enumerated amongst the antagonists which oppose the discovery of real causes; in addition to which it endows certain imaginary causes, which it denominates "supernatural," with extraordinary powers. Hence, whenever a well-organized mind, formerly seduced by this faculty, escapes from its trammels, and comes under the guidance of real knowledge, it cries out with VIRGIL,

"Felix qui potuit rerum cognoscere causas."

Imitation and gaiety, which tend to turn away the attention from the principal object towards its necessary points, ought also to be considered as antagonists of causality.

Examples.—The positive examples of this faculty, as of comparison, are to be found in all well-developed heads. FRANKLIN presents a great development of this organ; that celebrated man possessed great influence over a great nation, and you will never find an abstraction producing the same effects over a civilized nation. Look at the head of SPURZHEIM, who possessed this faculty in a very high degree, but the effect is much modified by other organs, especially that of veneration. Here, again, is the head of DESORMEAUX, a man extremely given to positive studies, as I told you before; in a word, all those great men who have directed a multitude of their fellow-citizens. FOY, BENJAMIN CONSTANT, &c., might be cited, as presenting a remarkable development of the forehead in this region. It is not by charlatanism that one can, now-a-days, acquire any durable influence over a nation; it requires a foundation built upon facts, that are easily appreciated, at least, in whatever concerns social order. Here are the casts of the BARON DE ZACH, of CUVIER, DUPUYTREN, and NAPOLEON; in all their heads you will find the organ of causality either very considerable, or sufficiently developed to create a preference to real over imaginary causes: see how broad the forehead is, not only in the middle region, but also on either side! The negative examples may be found in the heads of all criminals, and other abandoned men. It has been remarked, that the organ of comparison was much more developed than that of causality in the head of PITT; in fact, PITT was perpetually shifting from one expedient to another, instead of attacking evils in their source, and discovering the causes of things, as all great men do. This line of conduct may sometimes succeed, but its effects are seldom durable, and it is

this which constitutes the great difference between the heads of Fox and Pitt. The former investigated the causes of things with much greater talent than the latter; and hence you may perceive that the development of Fox's forehead consists principally in an elevation of the middle and superior regions, while that of Pitt is more broad. Fox was the idol of the popular party in England, and it is in the enlightened classes of a large population that we always find the most correct notions on the real causes of affairs, for the people always look most closely on the productions which satisfy their primary wants.

Notions.—It has been supposed, and very generally asserted, that this faculty is stronger in the English and German nations than in the French people. If this be the fact, it is to our disadvantage, for causality is the highest of the intellectual faculties. But let us be just as well as frank. If the French nation, generally speaking, presents a less degree of development of the organ of causality, this is compensated by a richness of perceptive faculties, which furnish abundant facts, and, when aided by causality, produce great results. However, the English and Germans, in short, the inhabitants of all civilized countries, whose brains are well exercised, may also present a full development of the receptive organs. I am far from wishing to disparage any nation, but here is a remark which seems to me just and true. In proportion as you descend from north to south, you find the receptive organs and ideality more and more developed. Men of this mould ought, then, to attach themselves to facts, which they represent under the colours of their imagination, and thus employ for the perfection of the different arts; hence Italy, and, above all, Rome, offers such striking examples of this. However, when this rich development of the receptive organs, and of ideality, which are less commonly observed in the north, are seconded by causality, you have the most sublime results. Thus, if England has produced a Bacon and a Newton, Asia, Egypt, and Greece may boast of their ancient sages and philosophers. Africa produced her learned Arabians, who saved for Europe the wreck of science. Their heads might be justly compared with those of Kant, of Schelling, or of Hegel. Italy had her Gallileo, France her Descartes, her Condillac, her Montesquieu, her Voltaire, and Voltaire was a truly great man; his faculties were so numerous, that he seems to have been at a loss to choose which he should employ: his genius was immense—universal. Look here, at this cast, and see how the whole intellectual apparatus is finely developed. Hence no other philosopher, no other writer, ever made so general or so profound an impression in his age; it is useless to say he was superficial, for look at this head, and you will find causality united to comparison. Language, and a spiritual raillery, were his principal instruments of action; he seldom gave himself the trouble of descending to demonstration; he could have done so with the most brilliant success if he had felt its necessity, but the rapidity of his conceptions, the greatness of his comparison and causality, revealed so instantaneously the prevailing absurdities of the day, that he regarded demonstration as superfluous, and contented himself with applying the lash of his ridicule. His only fault, if he had one, was in supposing his age too intelligent. But this was no fault; it produced the most happy results; and if the fanatics of the present day are reduced to deplore the blindness (as they call it) of the French to sacred delusions, it is to Voltaire that the glory of having freed us from them mainly belongs. What would be the present condition of society if the clergy still governed our legislative assemblies—if the criminal priest could still brave the arm of the law? Go to Rome, and you will find your answer. The test of Voltaire's immense genius is found in the fact, that notwithstanding the unceasing clamours of disappointed fanatics, the editions of his works continue to multiply, and the glory of their author survives, untarnished; yet the fury of devout zeal was never directed with such energy and perseverance against any other mortal. The Abbé Raynal possessed a great deal of causality, with, perhaps, a little too much ideality, and hence he is accused of having fallen into the romantic in his history.

You must not be astonished at my entering into such minute details; the science of phrenology *must* march, for the benefit of mankind is our object, and we show you the means of obtaining this benefit, by showing you how to neutralize the failings of man in every condition of existence. Moral philosophers have established nothing for the cultivation of the human faculties; if ever phrenology arrives at perfection, each individual will then know which is his most powerful faculty, and which he should watch with care; let us, therefore, pursue our course, without noticing clamours unworthy attention.

Animals.—Mr. Vimont admits causality in the elephant, dog, and ourang-outang, and attributes this faculty to an analogous organ occupying the same situation as in man; this analogy seems particularly striking in the head of the ourang-outang, which bears a great resemblance to the human head; and you know the animal just mentioned should be placed in a rank much above monkies. M. Vimont also thinks it is to this faculty that the dog owes his superiority over most other animals. The truth is, that no other animal observes with the same attention as the dog. Compare the accurate

manner in which he observes every thing that passes around him, especially all that concerns his master, with the petulant agitation of most monkies; his searching and thoughtful eye, which reads so faithfully the human physiognomy, with the wandering, inattentive eye of the monkey; compare all this with his conduct under trying circumstances, decisive at once of his own and his master's fate, and you will find it difficult to refuse the dog a considerable share of causality. Had I the time to lay before you all the observations I have made on this faithful animal, I would excite your interest and surprise in the highest degree. He derives the connection between cause and effect in the conduct of his master, and in his relations with other individuals who frequent his master's society. It is useless to puff ourselves up with an unbecoming, as it is a ridiculous pride, and class animals in a different world from our own. Their superior faculties are much less finely organized than ours; this is true, but they possess a share of all that we have, at least the mammiferous animals which live in our society do, and, above all, the dog. How, let me ask, could these animals understand us, unless their organization were analogous to ours? Dogs fully comprehend our actions and our words whenever they relate to the instincts and inclinations of property, conversation, benevolence,* protection to misfortune, or feebleness; but they are unable to follow us in the operations of causality and comparison. Unfortunately they want the power of speaking to manifest all they feel for us. Hence the public, oftentimes wiser than the philosopher, is ever ready to say of a dog, "he wants nothing but speech." To complete, as far as I can, the functions of the organs of causality and comparison, I think it right to add the two following dissertations, on the Origin of Personality, and the Classification of Abstraction, which want of time prevented me from examining thoroughly in this lecture. They come the more *apropos* here, that it is impossible to separate the "*I*," and Abstractions, from the functions which phrenologists assign to these two organs,—causality and comparison.

* One of my friends had a mistress, whom he thought faithful; his dog was in the habit of visiting her alone, and at a certain hour, every day; having remarked a young man in the lady's apartment, who, no doubt, conducted himself in rather a familiar manner, the dog immediately ceased his spontaneous visits, and refused to follow his master into the room whenever he came to see the unfaithful object of his affections. The dog continued this line of conduct until he had full evidence that the secret amour (which the lady afterwards confessed) had altogether ceased. I was told the above anecdote by the master himself, who communicated it in confirmation of what he had heard at my lectures.—*MS. note by M. Broussais.*

THE SENTIMENT OF PERSONAL IDENTITY.

On "Self."—Does the feeling of personality, of our identity with what we are, and the extension of that identity, unchanged, to the future,—the faculty of distinguishing ourselves from every thing else,—in a word, does the "I" depend on the organ of causality, or that of general comparison, or on both these organs together? This question seems a difficult one; at first view we feel inclined to refer the sentiment of individuality to comparison, for we distinguish ourselves from the rest of nature by a comparison with its objects. Phrenologists have not decided, that I know of, the question we have just addressed, and doubtless it is rash of me to grapple with it. However, I trust the following observations may contribute towards its solution.

All our perceptions comprehend a certain degree of comparison; this you have already seen. But the philosophers hold, that while we compare objects together, we are at the same time forced to compare them with ourselves; if this were true, it would establish the existence of a sentiment of individuality from the very moment of birth, and even, perhaps, during the last months of intra-uterine life. This would seem probable so long as we examine the question merely in a logical way, and without reference to facts; however, even in the adult there are perceptions unattended with this feeling of "I;" this necessarily occurs sometimes, and every one may convince himself of it by reflecting on what has passed in his own mind. The infant, in his cradle, never thinks of himself, and years roll on before he says "I, I am different from every other being." The inferior animals never think of their individuality; the insect, the snail, the lizard, the frog, &c., are totally unconscious of this sentiment on perceiving an object calculated to satisfy their wants or menace their existence; yet none of the animals just mentioned neglect to satisfy their wants, or confound themselves with the other objects of nature. They feed and shelter themselves; fulfil the office of reproduction; fly from danger, and lavish on their offspring every care necessary for their preservation and future development. Thus neither man nor animals is compelled to feel a sense of individuality by the circumstances of existence or reproduction. How many men are there, who totally forget their "I" in the pursuit of some favourite object! Instinct alone is sufficient for this, and as the instincts are excited by our perceptions alone, it follows that the latter phenomena may equally exist without a sentiment of individuality. Hence the

psychologists are altogether mistaken in affirming that every perception supposes a sentiment of personality, or of "I."

Having cleared up this first point, let us proceed a little further, and see whether the faculty of general comparison, aided by the perceptions and sentiments, is capable of producing the idea of individuality, which, as we have just seen, partial comparison fails to establish. When man begins to distinguish himself from all surrounding objects, does he do so by virtue of what the metaphysicians call "consciousness," or by virtue of his perceptions? It is a fact that the child evinces a tendency to designate himself by the third person of the verb, he says, "John (his name) wants this, John wants that," before he thinks of saying "I want." This remark was repeated a few years ago at Nuremberg, in reference to GASPARD HAUSER, who never learned to speak before the age of 17. It is important to mark this tendency, for it proves that man commences perceiving his own existence by his senses, in the same way that he perceives any other object of nature. It is certain that we always experience some difficulty in making a child understand how "I" signifies the same thing as his proper name, and this was a point upon which the child at Nuremberg showed himself excessively obstinate, though he possessed sufficient intellectual capacity. He constantly made use of the expressions "Gaspard is hungry; Gaspard wants to go out; Gaspard is sleepy," &c., in spite of the reiterated correction of his masters, and it was a long time before this tendency could be overcome. This difficulty evidently arises from the fact that the child derives whatever idea he may have formed of *self*, from the exterior of his own body; he sees that each person has a peculiar name by which he is distinguished; but he refers these names to the external form of each individual, and there stops; in the same way he refers his own name to his own external form, and these two impressions become associated in his mind; the individual, in his method of reasoning, becomes, Peter, John, &c., words representing his body, his outward form, and he refuses to recognize his individuality when bid to designate it under the abstract terms "I" or "self," which represent nothing tangible to his senses. It is only when he has frequently heard other people designating themselves in this manner, and when his organs are sufficiently developed to produce the sentiment of personality, that he is able to understand the meaning of these words; a sufficient proof that while he was, in the strict sense of the word, an *infant* (unable to speak), he formed no idea of personal identity, but was guided entirely by instinct and sentiment.

It follows from the above facts, which metaphysicians have completely overlooked, that consciousness does not depend on the union of perceptions, instincts, and sentiments, with general comparison. Hence we must seek its origin in the two superior faculties of the intelligence, taken separately or together. It seems a matter of some difficulty to determine to which of the two personal identity should be referred; for comparison is, beyond doubt, the basis of the feeling of personality, and we are moreover compelled to refer it to general comparison, as that is applied to all the objects of nature. In fact, man compares himself with himself, as well as with external bodies; we compare our perceptions together, since we perceive that one differs from another, and that they differ from external objects, and from the organs which produce them in us. We compare our feelings and our instincts one with another, and with our perceptions. But this is not all; we analyze the various phenomena composing perception, sentiment, and instinct, and we compare the elements together. We find that our instincts and sentiments may exist in a great variety of shades, according to the objects which excite them, or our own dispositions; our appetites, our love, our respect, our veneration, present a multitude of varieties; we seize these varieties and compare them together. When we are feebly attracted towards any object, we call the feeling "an inclination;" if the phenomenon be more strongly marked, we then call it "impulse;" if sufficiently strong to trouble our conduct and disturb our repose, we term it "passion," "agony," &c. All these expressions are the result of general comparison. Once arrived at this limit, which apparently should be the term of our analysis, we make a step further, and separate ourselves from these phenomena by an abstraction which depends on a particular feeling. We pronounce the pronoun "I"—"I am different from all this—I do this—I suffer that." When our organs are once properly developed, we find ourselves compelled to say, "I am," "I do," "I suffer."

What has just been said proves that we owe, first, the sentiment of personal identity, expressed by the term "I," to the organ of general comparison; secondly, the sentiment of action, expressed by the words "I do," to the organ of causality, because these words express a cause; thirdly, the sentiment of passion, "I suffer," to the same organ of causality, because we denounce ourselves as the objects of a cause different from ourselves. Remark, however, that we may say, "I am acting," "I am receiving an action, or a sufferance;" and by pushing analysis as far as it can go, we can describe the "I," or "self," as being the subject of an active causality as well as of a passive one. The grammarians have felt the truth of this principle, for many of them reduce all verbs to the personal one, "I am." The fact is, we may reduce all our active verbs

to the phrase, "I am doing such a thing," and all our passive verbs to, "I am suffering such a thing;" hence the first person of the verb "to be," is sufficient to express every form of our being in nature, according as we employ it alone. "I am," as we employ with it an active participle, "I am doing," or a passive one, "I am suffering;" "I am," or, "I exist," is, then, as you see, the foundation of language; however, the "I" is anterior to all action or passion, for the individual must evidently pre-exist before we can conceive him acting or suffering. We establish the existence of our personality by an internal operation of general comparison; this has been just proved. Hence the organ of general comparison should be considered as the organ of "I," or "self;" that is, of the sentiment of existence; on the other hand it is impossible for an individual to exist without feeling or acting, which implies a sentiment of causality, *ergo* the organ of causality is equally necessary to the distinction of "self." The arguments now adduced seem to show that personal identity, or the feeling of personal existence, depends on the two superior intellectual organs which phrenologists call reflective. This was a point in phrenology of some importance to decide in an exact manner, because it had been neglected by our predecessors. The following proofs, drawn from empirical observation, may be adduced in support of what I advance. I shall merely give a *résumé* of them, as they have been already detailed in full.

1. The sentiment of personality does not depend on the perceptions, on the sentiments, or on the instincts, for the infant possesses all these faculties long before it can distinguish itself, in an exact manner, from the rest of nature. This we have proved. During the whole of this period, he supplies the necessities of existence through his instincts, like an animal.

2. The sentiment of personality depends on the reflective organs, because it becomes developed only as they become developed; and when they are weak or null, it does not seem to exist. As a proof of this, we quote idiots, who are unable to distinguish themselves by "I," though evidently capable of partial comparisons, connected with whatever perceptions, instincts, or sentiments, they may possess. Such is a *résumé* of our proofs. However, it is right to mention a difficulty which presented itself to me a few days ago, and which others may have occasion to observe. A man affected with pains, extending all along the region of the cerebellum and spinal marrow, assured me that he experienced a remarkable diminution of the sentiment of existence and personal identity. It is as easy to conceive that an affection of any instinctive organ should diminish the action of one or more intellectual organs, or the reverse. Do we not find the proof of this double fact in a great number of cerebral diseases? Is not the judgment weakened in a variety of circumstances which do not primitively affect the brain? Ask an individual labouring under typhoid gastro-enteritis, whether the feeling of "self" is the same as it was when he enjoyed perfect health? The sentiment is either augmented or diminished in all persons affected with any irritation, whether acute or chronic; and when the irritating cause acts with great intensity, the feeling becomes confused; whenever life is attacked directly, it even disappears altogether with the other faculties. Why, then, astonish ourselves at its being dulled by a partial affection of the brain?

It is impossible to extend our observations to any further length on the reciprocal influence of the different organs. You will find the subject treated at full in "The Examination of Medical Doctrines," and in the new edition we are preparing of the "Treatise on Irritation and Folly." We have now to examine the two grand questions of "volition and liberty," which are evidently connected with the higher intellectual organs.

THE WILL.

Volition.—This, beyond all doubt, is an operation of the intelligence. It is the "I" who says, I will. Hence volition cannot exist independently of intelligence. It is an expression of "I" in the active state, for we can reduce it to "I am willing." It does not belong to the sentiment of personality, declaring its own existence, nor its sufferings; it is a mode of action of this sentiment on external bodies, on ideas, on sentiments, or on instincts. Here we may refer to the circumstances already mentioned, as proving the existence of "self," and we shall then see that volition also exists only in the same circumstances. Volition may manifest itself with different degrees of intensity and perseverance; these latter constitute its *qualities*, which must depend on the instincts and passions, just as firmness does. When the sentiments and instincts are strong, volition is energetic; if the organ of firmness or perseverance be strong, it also acts powerfully. Let us pass to liberty.

Liberty.—It is the personal sentiment, considering itself as an active agent, that says, "I am free." Hence, liberty, as well as volition, belongs to that sentiment, of which it is a mode of action. Thus liberty is also confined to those circumstances in which the existence of "I" is indisputable. We have already determined, with great care, what these circumstances are. We might stop here, for our demonstration is complete, at least so far as phrenology is concerned. However, it may be useful to add a few reflections on the limits which are placed, by our organization, to liberty, and on the use we make of it. In the first place,

let me remark that liberty is confined within the same limits which bound the action of "self" and of "volition," for liberty can only exist in cases where the two main intellectual faculties are sufficiently developed to enable "I" to perceive itself; thus it does not exist in the new-born child, nor in animals. In addition to this, liberty is seduced or perverted by all the strong passions which pervert volition and the personal sentiment ("I.") This is admitted by all philosophers and legislators; and a criminal judge frequently pronounces the acquittal of some unfortunate individual, whose insulted honour has made him an assassin. Finally, liberty is paralysed at every moment by the pressing necessity of our primary wants. We see it yield, as well as volition, to the want of respiration, of excrementation, &c. But here we have to make a few remarks. Volition is compelled to yield before the muscular efforts excited by a desire to vomit, by parturition, while liberty is quite unconnected with these acts, or is even indignant at their being necessary. Volition, liberty, and the personal sentiment ("I") are equally suspended by the imperious necessity of sleep, and by all strong organic irritations; but this does not belong to our subject. Let us pass to a consideration of the use which man makes of his liberty in the different circumstances of life.

This is a delicate subject, for man is, ordinarily, very jealous of his liberty; whoever dares to attack it becomes at once an object of bitter irony or anger on the part of the psychologist, whether sacred or profane. No matter; let us at least explain our ideas. Every one piques himself that he is free, and proves his liberty by telling you, "I *will* the extension of my arm, and I extend it; I will its flexion, and I flex it." Who dare say that I am not free to sit down, or stand up; to go to the right, or to the left? Certainly, man is free to do all this. No one in the world can think of contesting his liberty in this sense; but what cerebral modification does he obey when he adduces all these proofs of his freedom? He acts under the predominant influence of the organs of reflection and personal sentiment. He desires to exhibit to his fellow-men his "I" in a state of freedom, and he does this in a most victorious manner. But does this prove that man will be always as free when he acts under other influences than a desire to prove his personal freedom? Nothing but complete ignorance of facts could induce us to answer in the affirmative. If this were the case, what is the good of his instincts and sentiments? Are they not placed within, as so many powers destined to make man employ his liberty in a manner conformable to his interests? Certainly; the object of these powers is to determine and influence man's conduct, and we see him universally obeying those which are most exercised by education or example, or, in other words, governed by the sentiments and instincts which circumstances have rendered predominant. It is this that constitutes the habits and manners of nations, of societies, and of the various professions and trades. In spite of his boasted liberty, man does nothing during his whole life but what these influences accustomed him to do during his youth. He acts according to the habits they have given him, and though he may have the appearance of simply obeying his liberty, he inclines to the side towards which his predominant instincts and sentiments impel him. He obeys a multitude of invisible masters all the while that he cries, "I am free! I do what I like!" merely because he can exercise his liberty on things of minor importance. Singular anomaly in the constitution of man! In all acts of little consequence he seems perfectly free, but his independence vanishes upon all great and imposing circumstances, upon which his lot in life depends. He sees and tastes his liberty in the *modus faciendi* of all his actions, for he is free to vary the manner of executing them; but the tyrants who dominate him in tracing a line of conduct, escape his observation. Is a man free to be unambitious, without passion or cunning, avarice or pride, cruelty, confidence, or ambition? Does it depend on himself whether he shall perceive all the qualities of a body presented to his senses, or only feel a few of them,—to observe all the circumstances of an event, or only appreciate a small part of them? "Without doubt, not, (some one will say); but he is free to act in a thousand different ways, under the influences you have just enumerated, for he may or may not obey them, as he pleases." I answer, "He certainly possesses the liberty of action, provided the organs of volition and personality, on which this faculty depends, are strong and vigorous; but if they are feeble, he ceases to possess it." Let us first examine men in whom they are feeble. Such an individual is really free only in indifferent actions; he is not so in the important concerns of life. He obeys, successively, the impulse of his different passions, in proportion as they become developed; he is borne away by every external influence which circumstances may throw in his path; and, if you are phrenologists, you may discover the most perfect harmony between the organs of his passions and the errors of his conduct; between the weakness of his intellectual agents and the inconstancy of his character. Let us now speak of the individual in whom the personal sentiment is endowed with a powerful volition and incontestable firmness. Do you imagine that he will amuse himself, if he calculates his interests, with exercising his liberty in the execution of important and influential actions? Far from it. He chooses, perhaps, a profession, perhaps a wife, but his choice

is seldom dictated by an "I" free from all influence of passion, and desirous of liberty at any price; on the contrary, he obeys a personal sentiment, guided by ambition or by vanity, by the want of acquiring, or by love, &c. When his career is once plainly marked out, he seldom deviates from it; his actions are regulated by predominant interests, and, as in the former case, he never enjoys a full and complete liberty of acting, except in things so futile and unimportant that they are not worth mentioning. "I am free to spend my fortune," cries the miser, but he never lavishes a penny. "I am free to be prudent, tranquil, and economical," cries the spendthrift and libertine, "and I will become so, when I wish it," but his conduct will never change, unless he has organs capable of making him change it. A writer, who has a tendency towards facts, is firm; and a good logician may inculcate intolerance and fanaticism; assuredly he is free to do so; but if he be what he appears to be, unless excited by ambition, vanity, cupidity, &c., he will never turn psalm-singer. In the same way a fanatic, an intolerant author, who is naturally sophistical, and given to alter facts, as all sophists are, will never become a strict logician, or submissive to well demonstrated facts, however free you may think him to assume such a character. When an enthusiast lays aside his error, it is because his organization enables him to recognize the truth which others exhibit to him, or discover it himself by an investigation of facts. In a word, the personal sentiment, ("I,") volition, and liberty, are led away by great passions or great interests, in all the important actions of human life; and full liberty is only exercised on acts of minor importance, or, at least, those which appear such to us. It may be answered, for some people are very fond of a reply, "Suppose a man fancies to prove his liberty by frequently changing his conduct, or even his condition in life, like the person in the Henriade, who 'took, left, and retook, arms and the plough.'" To this we answer, in our turn, that such a person is possessed of little common sense, and that if we had an opportunity of examining his head, we should find inconstancy, want of judgment and of conviction, with some excellent predominant sentiments, which were lost from want of the co-operation of other faculties. Suppose, again, a man, forcibly attaching himself to actions repugnant to his cerebral organization, and that, merely for the sake of exercising his liberty; he will perform those actions, badly;—and I pity him if he be the only person unconscious of it,—he must be ranged amongst men of little wit; he is, in fact, foolish, and the phrenologist will discover the reason of his irrational obstinacy in the conformation of his brain. In politics, liberty is defined to be "the faculty of doing whatever is not forbidden by the law;" in morality we might define it to be the power of doing whatever is not forbidden by our intellectual faculties, instincts, and sentiments. As to the mode of executing various actions, not opposed to the faculties just enumerated, here we have full liberty, and we employ it accordingly. If this were not the case, if we could employ our liberty on every occasion according to our caprice, the conduct of man in society would be placed beyond all law and all rule, and the phrenologist would find it difficult to explain the phenomena of the human intellect in the perfect way he does at the present day.

To sum up what we have said, the *volition* depends on the personal sentiment (the "I"), and receives its qualities from the passions and from the organ of firmness. *Liberty* also depends on the same sentiment, which employs it with more or less freedom, according to the force of the intelligence, the sentiments, and instincts; "intelligence" is a term which embraces the action of all the organs of relation, taken together, and is strong in proportion as the organs of causality and comparison are well developed and well exercised. It now remains to examine the meaning of the term "reason," which latterly has been made the basis of a system of philosophy.

REASON.

On Reason.—M. COUSIN, in his reflections on the posthumous work of MAINE DE BIRAN, says, "Consciousness is a triple phenomenon, formed of perception, volition, and self-knowledge, employing reciprocal conditions, and composing the totality of intellectual life. To know, is a distinct fact, *sui generis;* call this faculty as you will, intelligence, understanding, *reason*, it is elementary." Let us first examine the definition of "consciousness," to which these elements are attributed; to *feel* is here taken in much too vague a sense; we have already proved that a person may feel, without feeling himself, that is to say, without consciousness. It is unnecessary to recur to this point; you see well enough that *feeling*, taken in a general sense, cannot form one of the elements of consciousness; but when once we know, or are convinced, that we feel, then consciousness exists, for we feel ourselves. Hence, as a first element of consciousness, we adopt self-feeling, instead of feeling in general. *Volition*, we have already said, is nothing but the personal sentiment willing its own action on the external world, or the cessation of the action of external things on itself. Thus volition becomes a second element of consciousness. *Self-knowledge*—this term must be defined, for we can only know ourselves under certain relations. If metaphysicians persist in thinking the "I" distinct from the brain, I give up the question as unintelligible. I

would propose substituting for self-knowledge the term, consciousness of self, or our personality, terms which simply mean being conscious of ourselves, or having the personal sentiment "I." Thus, two elements of consciousness, viz., *self-feeling* and *self-knowledge*, become confounded in a single principle, expressed by the phrase "to have an I," while the third element, *volition*, merely describes the same "I" *willing*, and more or less *free*, in the execution of its volition.

Let us now pass to *knowledge*, which M. COUSIN has taken in its widest sense. This forms *reason*, according to M. COUSIN, who very justly accuses MAINE DE BIRAN of having confounded consciousness with volition. But this same personal sentiment ("I") which distinguishes itself (it cannot *know* itself) is also the faculty which recognizes the existence and action of all the objects of nature: this is the only sense we can give to the term *know*, taken in its greatest latitude. To *know*, taken in this sense, is a sign representing the personal sentiment ("I"), applying itself at the same time to itself and to all objects that we are capable of *knowing* the existence of, and hence represents the action of the two superior intellectual faculties.

But does the term *know* really describe the reasoning principle? In other words, are consciousness and reason the same thing? To resolve this question, we must here enter into some details on the nature of consciousness, into which metaphysicians, strangers as they are to phrenology, could never penetrate. There is a great variety of degrees in consciousness, and these assuredly belong to the intellectual organs; but, on the other hand, do they all depend on the two superior organs of comparison and causality, on which the personal sentiment ("I") depends? Let us examine the new question. It is certain that the intellectual organs, taken collectively, know or make known, external objects long before they communicate the feeling of personality to the infant, and without ever communicating it to the lower animals. Here is a fact to begin with; consciousness, then, generally speaking, may exist, independently of the personal sentiment.

A second fact is this: The superior intellectual faculties can only know such objects as are presented to them by the superior organs, or perceptions. Now, as these organs perceive their respective objects with various degrees of energy, &c., it follows that the same degrees must exist in consciousness. Thus, an individual who perceives colours in a confused manner, who confounds together the various shades of coloured objects, cannot have the same consciousness of colour as a person in whom the perceptive faculty is well developed. The same remark applies to forms, sounds, events, the respective position of bodies, &c. Hence the existence of a personal sentiment ("I") is not alone sufficient to render the knowledge of the external world complete. Again, as consciousness applies itself equally to the faculties with which we are endowed, and to the signs of those faculties, we may observe a difference in different individuals, according to the degree of development of their sentiments and instincts, or according to the force of their intelligence. Hence we find some men who know themselves perfectly, and others who seem totally ignorant of their own character and feelings. Since, then, consciousness exists in such diversified degrees, it cannot be the same thing as reason, for the term "reason" cannot be applied to the consciousness of living beings who are "deprived" of the personal sentiment, (not accorded to the infant), nor to consciousness associated with self, when the former is confused or partial. Thus, we refuse reason to a drunken man, to a monomaniac, though he may be very reasonable on every point but one; hence, if we wish to give each word its true sense, we must allow that consciousness and reason are not identical, and consequently ought not to be confounded together. What, then, is reason? Every one feels its empire, and though every one employs it as an instrument of definition, each refuses to define it. Should we not see in the word reason the sign "of the concordance of the principal intellectual faculties, with sentiments and instincts dominated by the two superior faculties of the intelligence?" Here is my definition, let us examine it.

First, we say, "concordance of the principal intellectual faculties," for the existence of all is not necessary for the existence of reason; a blind or deaf man may have sufficient reason, provided he be only one or the other, for an individual who is blind and deaf at the same time, cannot possess a sufficient number of faculties to constitute reason. An individual deprived of the senses of taste and smell at the same time, may also have reason; would he rank amongst reasonable beings without the sense of touch? Experience has not decided this question; we think not.

Second. As a second condition of reason we require that the instincts and sentiments should be properly dominated by comparison and causality, represented in the action of the personal sentiment "I," feeling, willing suffering, and judging. The condition of infants, drunkards, fools, and persons dominated by some violent passion, to all of whom we refuse the attribute of reason, proves the necessity of admitting this part of our definition.

The cases now mentioned being excepted, reason exists in every man endowed with a personal sentiment which feels itself free, and who possesses sufficient perceptions to

judge of bodies, with their relations to each other and to himself, and to estimate the value of instinctive or sentient impulses; that is to say, in every man who does not permit these impulses to seduce him, though he is capable of feeling them, both when they present themselves in the normal state (*passions*), or as results of some abnormal condition. Such are the explanations we have to offer touching our first essay at definition; we might have wished for a shorter one, but how attain this, when the word "reason" expresses a complex state and relation of our faculties? We might, indeed, say the word reason expresses, in general, the *domination of the personal sentiment over all the faculties of a properly developed individual.* Should this new definition still appear too long, we may find the means of curtailing it in the explanations which precede; however, it suffices to show that reason depends on the two superior intellectual faculties acting together, and, consequently, that phrenology gives a much better explanation of this much disputed point than any system of metaphysics.

On Abstracts.

The species of abstracts are various; let us enumerate them briefly. First, The attributes of bodies, colours, forms, dimensions, tastes, odours, sounds, arrangement, and disposition; all these may be separated from bodies; that is to say, we may think of them without thinking of the bodies to which they really belong: this gives a first species of abstracts. The operation by which this separation is effected has been named abstraction, which presents each attribute as belonging to several bodies at the same time; the attribute then lays aside its substance, and becomes an abstract idea. In common language, this operation is called abstraction; it is evidently nothing but a mode of action, or being, of the cerebral nervous system; yet in language these abstracts are brought into action as so many bodies. Second, The same operation which separates our perceptions, also exercises itself on the sentiments and instincts. I see a dish which excites my appetite, a scene which softens me, an object which arouses my hatred, or my pride, my love, or my humility; when I express what I feel in these different conditions, by the words hunger, pity, anger, pride, love, &c., it is evident that these words only describe the personal sentiment of feeling or having desires, hatred, aversion, &c., in a word, the experience of some instinct or sentiment. This being the case, I *abstract*, that is to say, I *separate*, these sentiments from myself; I consider them as foreign to my own individuality, and to every one else; I take them away from their substance, and I make what metaphysicians call abstracts, or abstractions; by the use of language I employ these abstracts as if they had not been separated.

The chemists, whose special business it is to determine the composition of bodies, admit the existence of simple substances only in a conditional manner, and never pretend to assert that the bodies which still seem to be simple may not be proved compound at some future period. The idea we have of simplicity is thus purely relative; we are even unable to say how far the term "simplicity" may be applicable to various primary forces which act on our senses as bodies, electricity, for example, caloric, polar magnetism, &c. It is evident that the spiritualists found their notion of the simplicity and indivisibility of their immaterial substance on the very imperfect idea we have of simple bodies, while the unbiassed observer can only consider it as an inexplicable phenomenon of nervous action. But here the spiritualists will repeat what they have already said: "We obtain this notion of the simplicity of spirit or immaterial substance, by reflecting on what passes in the mind of man, in the same way that we obtain the notion of material substance." This has been already answered; the existence of material substance is contained, by induction, in the perception of corporal attributes; that of an immaterial substance is neither contained in the perceptions of bodies, nor in our sentiments, nor in our instincts,—phenomena whose existence implies merely that of a nervous system, living and acting, and nothing else. But the spiritualists retort, "*We* find an immaterial substance in these phenomena." How is it possible to answer a mere assertion? The only thing we can say is, that the spiritualists, and those whom they denominate materialists, draw different conclusions from the same facts. You may now ask me, Why are these conclusions so different? Phrenology and observation teach us, that "the sentiments of veneration, of ideality, and of marvellousness, predominate the organs of perception and causality, in persons addicted to spiritualism. They regard facts with less attention than the impulses of their feelings, and their intelligence seizes with difficulty the relation which exists between cause and effect." As to the materialists, phrenologists tell us "they bow with submission to the authority of facts, and their organ of causality acts with greater vigour in discovering the relation between cause and effect, because it is well developed and properly exercised." Ask them again, if these so called materialists are without the superior feelings, and they will tell you, that man, to be perfect, should possess the elevated sentiments, which, far from opposing the action of causality, lend it powerful assistance, provided the perceptive organs be sufficiently developed and exercised to supply the intelli-

gence with an abundance of facts. Phrenologists also remark, that in cases where the perceptive organs are weak, while causality is very powerful, the individual will feel a kind of mania for explaining every thing, and, in the absence of facts, will, in spite of himself, have a tendency to employ imaginary facts as causes, no matter how his superior sentiments and ideality may be developed. As to persons in whom the organ of causality is feeble, they will necessarily obey whatever impulses they may receive from others; that is, they will readily admit as causes whatever explanation a superior intelligence may lay before them. If their intellectual faculties be feeble, and their knowledge at the same time limited, they can never shake off their early impressions; if, on the contrary, their knowledge of facts be extensive, while they are little given to veneration or terror, instead of believers they become sceptics, and experience no intellectual pleasure more agreeable than that of shaking conviction and dissipating belief.

LECTURE XIX.

CONSIDERATIONS ON SOME GENERAL FACTS RELATIVE TO THE ACTION OF OUR ORGANS.

GENTLEMEN:—Having passed in review the several organs, we shall now lay before you some facts relative to their action. Man, perfectly developed, is now the subject of our examination, whereas, at the commencement of the course, we merely considered him in the state of an embryo, or an infant.

First Proposition.—The brain is incapable of producing all the faculties which we have studied, without the intervention of external stimuli. We pre-suppose the existence of life, without which the brain evidently is inert. The life of the brain, and every other nervous apparatus, is kept up by the imponderables which penetrate it in every direction, communicating the faculty of exciting motion in the other tissues, and enabling them to assimilate the nutriment fitted for their growth or support. Several authors consider this principle to be nothing else than the electric fluid, while they regard all other imponderables, such as caloric, terrestrial magnetism, &c., as forms or modes of manifestation of the primary agent or principle. This question remains yet undecided; we know, however, that the living being derives its imponderables from two sources; first, the direct penetration into the nervous tissue of those principles which are diffused throughout all nature; second, the constant discharge, produced by chemical decompositions of our various fluids, brought into contact, atom by atom, with the solids. Some philosophers ask, Why an animal, suddenly killed by an electric shock, presents no trace of sensation or motion, although we are unable to discover any organic change of structure in his body? This certainly depends on the nervous apparatus having lost the aptitude to modify the imponderable in such a way as to render it fit for the purposes of life, although it continues to traverse the body for a certain time.

The nervous system is the admirable machine by which the primary imponderable, whether simple or multiple, corresponding with the universal soul of the ancients, produces all the phenomena of life, and amongst them the faculties of the brain. But this force, or this soul, is connected with the force which organizes our living tissues, and, in its turn, the latter, under the name of vital chemistry, is connected with the chemistry of inanimate bodies, as it is with every physical power, with attraction, &c. We are unacquainted with the common bond of union between these different forces, which appear to be matter in movement. In this manner, also, we arrive at the notion of a single regulating force, or of GOD, and we show that atheism can never penetrate the mind of a man who reflects profoundly on what passes in the natural world.

I mentioned just now external stimuli. These are derived from all bodies existing in nature which act on our senses; as soon as perception takes place the brain is excited, and the cerebral organ, destined to re-act on the impression received, acquires a degree of action more intense than any other one. It matters little whether it is the whole brain, or merely the organ of the faculty, which contributes to its manifestation. It is possible that the whole man may be stimulated; the excitation of the nervous system may be general; but the point of most importance to determine is, whether the results or manifestations are proportioned to the development of such or such portions of the brain; for, if the affirmation of this proposition be true, (and it is incontestible), we find ourselves forced to designate the part whose predominance constantly coincides with a determinate action, under the name of the organ of that action.

This is so clear, that I should waste no further time in its discussion, although the anti-phrenologists seem to consider it an objection of the highest importance; but I have just received, and will here notice, a manuscript, entitled, "Doubts on Phrenology." The author thinks that phrenologists are much embarrassed by the contradictory facts which present themselves as to the functions of organs; the division of the brain into organs seems to him inadmissible, because we are unable to determine either the number of faculties or the particular portion of the brain in which each faculty resides. Hence he proposes to consider the brain as a single organ, producing a number

of functions, which become more varied and numerous in proportion as the brain acquires development in the animal scale. We confess the question might be considered under this point of view, if we dispensed with proofs; for to prove the assertion is impossible, but we altogether deny that there exists no relation observable between the development of our recognized faculties and the regions of the brain which phrenologists have assigned to them as organs. The connection is always visible to the man who has taken the trouble of studying the subject with any degree of attention. The exceptions cited to the contrary are, for the most part, false, or result from imperfect observations; those which really exist may be explained away, or, if we are incapable of explaining them as yet, it by no means results that they are inexplicable. The degree of uncertainty which embarrasses every science in its infancy, does not prevent the true phrenologist from studying his science with pleasure, and the more he studies the more reason he finds for believing in its truth, unless altogether deprived of the organs of comparison and causality.

As to the question whether or not the whole brain acts for the manifestation of each faculty, this cannot modify the results of empirical observation, which is the very essence of phrenology,—it can only bear on the explanation to be given of the brain's mode of acting. The explanation offered by phrenologists is the more probable of the two, for we find a great difficulty in imagining how a simple change in the mode of action of the same fibres could produce the immense difference existing between the faculties of the brain, between the feeling of comparison, for example, and the ferocious pleasure certain men experience in torturing their fellow-creatures. How much more simple is it to believe that the representation of objects excites, in these different situations of man, different other organs of the brain; and this observation serves to show us that the organs of instinct and sentiment are not the same as those which act in the representation of objects. If we admit this first distinction, without the aid of the scalpel, why not admit others? If these other distinctions really exist, why should it be impossible to observe the organs corresponding with those distinct faculties? Contradict, then, if you will, not one or two men, but thousands of phrenologists, who have discovered, and every day verify, these relations. Tell them they are fools, or visionaries, and substitute abuse for verification, lest you may incur the displeasure of certain learned bodies, or of a few celebrated personages who would never condescend to study phrenology.

The author alluded to grants us, that in proportion as the brain acquires volume, it acquires additional functions; but he denies us the possibility of seizing the relations which may exist between each of these new regions, and the additional functions enriching the brain; he denies it, I say, on account of the numerous and important exceptions which have been cited against this doctrine. But let him take courage; I do not deny the existence of some exceptions, but certainly they are infinitely less in number than the enemies of phrenology represent them; or, for my own part, the more I study the science the less exceptionable examples I discover, and the knowledge it gives me of the moral nature of people with whom I am in habitual contact, has been so useful, that I regret having neglected it so long. The objection founded on the difficulty of determining the number of faculties is of no great weight. Phrenologists never pretended to determine that they had arrived at the limits of the human understanding; had they so pretended, I should have differed from them. We all work together for the discovery of truth; more than once I have expressed freely my doubts during the present course, and declared that I was ready to concede my own opinions to whatever seemed better demonstrated.

Second Proposition.—The instincts and sentiments never manifest themselves without the intervention of some external stimulus; we possess no example of the contrary. Hence the existence of innate ideas is a chimera; we merely possess innate dispositions resulting from our organization. Our senses are modified by the action of external causes, and immediately a corresponding action takes place in the part connected with the external stimulus. The two excitations are simultaneous, and on this account have been referred to electricity, for the electric excitation is the only one with which we are acquainted, which acts simultaneously on different regions of the same person, or on a long series of individuals connected together by contact. Thus, the excitation of light produces at the same instant all the ideas relative to light; the excitation of sound, all those relative to sound, and so on. A certain spectacle excites a certain passion, and no other but the spectacle must have been transmitted by the senses, or produced by memory, after having been once perceived. Thus, we can conceive no spontaneous action independent of external objects, and we should regret the distinction made by some between instincts and sentiments, which depend on objects, and those which are independent of them; for it invariably requires some external stimulant to bring our instincts or stimulants into play. Before we think of any object of food, we must have seen it; we must see a man or a woman before we can experience the sentiments of love or friendship appropriate to the sex; we must have witnessed misfortune to feel compassion; and so on for the rest. Conse-

quently, whenever the organ of a sentiment or instinct seems to impel you to the accomplishment of such or such an action, this very impulse implies a knowledge of the external object on which you are tempted to act. When this knowledge persists after the object has ceased to act on the senses, it constitutes memory. We have already shown that each faculty has its own memory, because each organ has the power of placing itself very nearly in the same condition as it occupied when the external body made an impression on it, although the external body be no longer present. All the faculties possess this power in common. But how explain this? say you. We are ignorant of the primary cause: the fact is a primary one, like so many others that we are forced to accept without pretending to explain; we may, however, affirm, that the same excitation which was produced during sensation, is produced during memory, or, in other words, that the nervous fibres are placed in the same condition, or mode of action, in which sensation had thrown them.

I find it mentioned in COMBE'S "Manual," that Dr. WATTS, a gentleman of whom I had never heard, has given the first idea of this explanation; this may be possible, for I am totally unacquainted with the period at which Dr. WATTS may have written; all I know is, that you will find it in my treatise on "Irritation and Folly," published in 1828, where I treat of ideas, and combat the physiologists, who endeavour to erect ideas into substances, after the example of the physiologists of the eighteenth century. Let us explain ourselves on this point. CABANIS, beyond all doubt, considered ideas as substances, since he calls them secretions of the brain; this is unintelligible; the only thing certain is, that whenever an object strikes our senses, we experience certain emotions or sentiments, which we are also capable of experiencing in the absence of the object. By recalling the perception (memory), we reproduce the emotion or sentiment which existed as an effect of it in the first instance. What substance can we find interfering in all this, except the nervous matter? Hence ideas, or perceptions, are phenomena of the nervous substance, depending upon sensations, as instincts and sentiments are nervous phenomena, depending on perceptions or ideas. I declare, formally, my incapability of giving idea any other definition than "a phenomenon or action of the nervous substance;" but we should distinguish ideas, properly so called, from other nervous phenomena, relative to the instincts and sentiments, which are equally produced by the brain.

When we have seen a spectacle which excites our horror, or our pity, our disgust or our indignation, we may reproduce these sentiments by recalling, with an act of memory, the idea or spectacle which first provoked them. But what does an idea recall to the mind? A body. Thus we say, "idea of a lustre; idea of a table; idea of a head," &c., or "image," because we compare the products of sensation with those of a mirror. We have sufficiently explained ourselves on this point, and only request you to remember that ideas are nothing but modes of action of the brain, considered in relation with bodies. In this acceptation, the term idea is clearly understood, no matter what sensitive organ may have furnished it. But virtue, grandeur, force, pity, cruelty, kindness, &c.; do these terms represent bodies? No; they represent the emotions we feel on having seen, heard, or felt, the objects which excite them, and we fall into an error when we denominate these emotions "ideas." The emotion is connected with its exciting idea as far as effect and cause may be connected together, but they should not be confounded together. The sign which represents your anger, pity, compassion, &c., never represents the object which excited them; in ideas, properly so called, the sign always represents the exciting object. These reflections should convince you still more of the falsity of those theories which consecrate the doctrine of innate ideas.

The term "idea" has also been employed in various other senses. Thus, people say, "This man had an excellent idea when he invented such a machine, or such a process." Whenever one investigates a new question or subject, in a new point of view, people say, "He has produced a new idea." In the same sense, the fabricators of romance conceived the "idea" of turning to account our basest passions; and the witticisms of a merry genius are denominated "ideas." The impulse which excited GALL to observe the relations between the different regions of the brain and its faculties, was also called an "idea;" in a word, every new conception, or invention, every new point of view, is termed, in vulgar language, "idea." But all these are oblique and figurative forms of speech, which should be banished from the language of philosophers; and in every future discussion on the faculties we should reserve the term "idea" for the perception of the objects of sense, and distinguish them from our sentiments and instincts, as well as from our complete or incomplete knowledge, or from the notions produced by comparison, judgment, and induction.

Volition.—We have seen that volition is connected with the personal sentiment "I," and hence with the superior intellectual faculties. It is, then, useless to recur to this question, which phrenologists have hitherto placed amongst their general considerations in the faculties of man.

Attention.—What is attention? Is this a primitive faculty, as many people think, or an action common to all our organs, as the

phrenologists say? Are there two species of attention, one with the personal sentiment ("I"), the other independent of it? Phrenology connects and explains all these various questions. I shall demonstrate this at some length. Children and animals are susceptible of attention; that is to say, attention is possible without the personal sentiment, without volition, or liberty. Is any organ briskly excited? Attention is developed in proportion to the quantity of stimulus it feels. The intellectual faculties act, but it is in a secondary manner. They do not command the first acts of attention, which may manifest themselves without any consciousness of self; this you may see in the infant, in your dog, in your horse, when you caress or menace them. You excite their attention involuntarily with a morsel of bread, or the lash of your whip. In these cases, attention is evidently independent of the "I." But there is another species of attention really depending on the personal sentiment, because we know how several of our ideas have been acquired. You say, "I feel my personal existence; I wish to direct my faculties towards such a point; it is not necessary, but such is my will; I shall study and observe every thing connected with it." Here is an attention depending on the personal feeling, and commanded by it.

As to the explanation of this phenomenon, it is said, "In these cases the organ of *individuality*, or that of *concentrivity*, is particularly the one which commands attention;" but, for my part, I am not quite convinced of this, in spite of the curious observations which M. VIMONT has made on animals who lie in wait for their prey. I think the personal sentiment, when free to act, is sufficiently capable of directing attention upon any object it pleases, though I feel myself unable to explain the great differences we observe amongst men, some of whom fix their minds with intensity, and for any length of time, upon a particular point, though surrounded by all the distractions of society, while other men are totally incapable of this effort, and are drawn off by the first sound which strikes their ear. Perhaps this tendency to be distracted may depend on the circumstance that the perceptive organs of the lower line of the forehead are very active in such persons, and hence lead them perpetually to the observation of new facts. This may be true or not. If observation convinced me of the existence of an organ of concentrivity, I would admit it at once, without, however, laying aside my opinion that the organ is under the immediate command of the personal sentiment ("I"). My doubts upon this point are greatly increased by observing that certain men, easily distracted by words, and particularly by songs, are capable of exercising a high degree of attention whenever they study in a silent place, or hear nothing but sounds (such as those of a carriage), which do not excite the intellectual organs. It seems to me that the facility of distracting the attention bears a proportion to the number of cerebral organs disposed to receive the impressions sent up by the senses; and hence the reason why one man, inaccessible to stupid prose, is immediately distracted by music or poetry, or why another will have his attention drawn off, in spite of himself, as soon as any favourite question is started, while his studies would be continued uninterruptedly by less interesting conversation. The various mechanical arts, painting, sculpture, &c., permit us to listen to conversation, and we take part in it. This fact shows that the intellectual organs are but feebly occupied by any manual labour, which becomes easy, and, as it were, instinctive, by habit. On the contrary, a musician cannot bear to be distracted, and requires the whole of his attention to regulate his tones and measures. The listener may engage in conversation; he only loses some of the beauties of the piece. The reason of this difference is, that it requires more cerebral action to execute a piece of music than to listen to it.

To sum up what has been said. The attention of the instincts and sentiments may be roused by external causes, without the intervention of volition; and in these cases attention is a spontaneous product of the stimulus natural to the organ. There is another species of attention, free, and produced by the intelligence. Observe that you may make the same remark on all the faculties, or sections, of the cerebral organs. Attention to their actions is developed sometimes by the external stimulus of an instinct, or of a sentiment, independent of the volition. These facts belong to the mutual influence of organs upon one another, of which we have so often spoken during the present course.

Explanation of the Passions.

Do the passions depend on pleasure and pain, as the old philosophers thought; or do phrenologists reason correctly when they describe as many passions as there are faculties? You see, Gentlemen, these two theories are very different. The philosophers pursue still the method which we followed ourselves in the infancy of our education; they consider our faculties in too general a manner, and, equally ignorant of their number or their characters, create at will a certain number of general faculties, which they describe as acting on the mind of man. In this way they created attention, volition, liberty, &c.,—terms which we have endeavoured to reduce to their true meaning.

The passions they reduce to two elements, pleasure and pain; or to love and hatred; for pleasure excites love and joy, pain induces sadness and hatred; hence the distinction of gay, joyous passions, and depressing, malevolent ones. This is the essence of the doc-

trine we all learned at school. Phrenology comes and tells us, "For every organ there is an emotion, and, consequently, a cause of passion." This once laid down and acknowledged, it became necessary to distinguish the passions according to the organs with which they were connected. Thus, some are connected with the instincts; for example, the passion for women, the love of children, the passion of combativeness, of destruction, of dissimulation, of avarice, &c. Other passions are nothing but the exaggeration of sentiments, as the immoderate love of power, and ambition, the love of approbation, &c., which some men aim at, no matter what it may cost them; the incessant tendency of some to venerate existing powers, or whatever is antique; to follow with enthusiasm the supernatural and the marvellous; the all-powerful taste of some men for play, or for hazardous enterprises and projects; the irresistible impulse by which others are induced to benefit their fellow-men; or the contrary passions, stimulating a love of satire, hard-heartedness, uncharitableness, &c.; the passion of jealousy and envy, which attacks different objects, according to the predominance of our different faculties. In a word, whenever one or two or more organs is excessively developed and very active, we are constantly placed in a state of slavery to them. The world then says, "He has such a passion," that is, he is ruled by the influence of such a desire. "He is passionless,"—his desires or impulses are not sufficiently strong to master his conduct." Sometimes, however, we say, "This person has a desire of pleasing, a love of coquetry, of fine clothes, a desire to put himself constantly forward, &c." These expressions merely imply a less degree of force in the sentiments.

We make a similar application in speaking of the intellect:—"This man has a passion for study; for the mathematics; for mechanics." If we constantly see him occupied on the same subject, we call it "a passion;" if the tendency be in a minor degree, we call it "a taste." You see what various significations the word *passion* has received. As to the question how far pain and pleasure may become the exciting causes of passion, the ancient doctrine requires modification. The fact is, we always experience an agreeable feeling in satisfying our wants; or a sentiment of pain whenever we are prevented from gratifying them. But neither the pain nor the pleasure produces our passions; they result, as we have said before, from the impulses of our several organs: we feel a pleasure in obeying these natural impulses, and a degree of pain when we meet any obstacle which opposes our satisfying them.

Properly speaking, the impulses of our organs do not produce pleasure, unless they are of such a nature as to bring with them a certain degree of satisfaction, directly, or in consequence of hope and marvellousness. Thus, the passions of a lover are themselves pleasures, and the passion of attracting flatterers, for hope and illusion always produce a certain quantity of enjoyment, not the less agreeable that it is imaginary. Most of our desires are attended with a species of uncertainty more painful than pleasurable; their satisfaction, however, is necessarily accompanied by pleasure, and we experience a kind of pain, termed regret, when forced to renounce them before satiety. Hence, pleasure and pain, considered as moral agents, are not the causes of passion, they are two general modes of internal feeling, attached to the exercise of our intellectual faculties, our sentiments, and our instincts.

The passions present certain varieties, which are proportioned to the development of our organs. The most powerful passions are those which depend on our most powerful organs, on such as act on the greatest number of viscera and muscles. Hence, love, and anger, which is connected with the organ of destruction (the latter being more or less related to the want of aliments), the passion of acquiring, &c., are frequently very imperious and violent. In general, the passions are more powerful and impetuous in proportion as they are connected with the instinct of existence, or reproduction; in this case they often pursue a man through his whole career in life, and only abandon him at the confines of the tomb.

Phrenology, then, teaches us that pleasure is connected with the satisfaction of an organ, and pain with its non-satisfaction. This is true; but phrenologists have altogether neglected the influence of physical pain and pleasure. I regret this omission, for it is an important one, physical pain and pleasure modifying considerably the intrinsic actions of the brain. A man afflicted with disease of certain viscera, the abdomen, for example, is always dull, and oppressed in spirits; a patient whose chronic affection tends to slacken the circulation of the blood, sees every thing on the dark side; should his organs of circumspection and meditation be strong, he easily falls into a degree of melancholy, or even delirium, which may end in insanity. Disease may act in a different manner on the condition of the brain. In primitive affections of the heart or lungs the circulation is frequently accelerated, and the brain receives more than its usual stimulus from the blood; in these cases the patient manifests a tendency to illusions, or to the development of the gay passions, as we sometimes see in individuals at the commencement of disease of the heart, or of phthisis. The connection between the state of the viscera and that of the brain is very intimate. Each disease acts in a peculiar manner on the centre of the nervous system, as the brain, in its turn, acts peculiarly on each viscera. When affected with terror

the heart begins to beat; and primary palpitations, again, communicate a feeling of terror without any motive. Any cause of uneasiness oppresses you, by accumulating the blood in the lungs; and, when affected with a primary oppression of the chest, or with dyspnœa, you are thrown into a permanent state of uneasiness. When the moral man is sad and depressed, the epigastrium feels tight and contracted; on the other hand, in primary constriction of the stomach, you feel a species of melancholy, for which you vainly seek a moral cause. When overcome with terror, your muscles either fall into a state of collapse, or contract convulsively; while, on the contrary, very excessive tension, or feebleness of the muscular system, inspires you with uncomfortable omens of an evil nature. Man, in particular, can never see his muscular force give way without receiving a melancholy impression. In despair, our whole economy is thrown into disorder, and all this depends on the brain. When a man whose intelligence still remains untouched, sees all his functions failing in a sudden manner, he requires a large share of moral courage not to abandon himself to despair. As to the effect of physical pain coming from the exterior, such as the pains of burns, wounds, and the various species of bodily torture invented by fanaticism, or offended *amour propre*, the moral force may resist them, provided the grand viscera are intact; for in this case volition enjoys a power and energy unknown in disease. The history of martyrs, in all ages, proves this fact. We have even examples of morbid cerebral excitement, or, if you will, insanity, stimulating men to torture their own bodies,—a species of folly never observed when the cerebral innervation has been reduced by deep and constant suffering of the principal viscera. Such are the facts, Gentlemen, which phrenologists have neglected to consider in their history of the passions.

The Association of Ideas.

Modern philosophers, regarding ideas as so many substances endowed with attributes, reduced them under certain laws, as we reduce bodies to the law of gravitation, or as we consider chemical substances combining in various proportions, and thus constructed a kind of romance on the association of ideas. According to this theory one idea naturally brought after it a certain other idea; sometimes they engendered one another reciprocally; sometimes they were united by an affinity inherent in their nature. You will find all this in the logical school of Condillac.

Phrenologists have attacked this theory, and, I think, with reason. Ideas become associated according to the organs of perception, of reflection, of sentiment, or of instinct, with which our organization may be connected; this I shall prove to you immediately. I shall select my examples from Combe's work, in which we find many most excellent ideas. Combe selected an elevation near London. M. Fossati, in his translation of Combe's "Manual," has substituted the heights of Mont Martre. From this point the spectator beholds an immense multitude moving about the public places and streets; he contemplates a mass of buildings,—the asylums of vice and of virtue,—without end. What association of ideas should this spectacle produce in the mind of each spectator? The man who has a taste for architecture, will seize at once on what is placed before him,—the execution and style of the public buildings, the size, direction, regularity, &c., of the different streets. The moralist will reflect on the dangers of those inconsiderate pleasures, of those receptacles of corruption, in which the inhabitants of a great capital dissipate their economies, undermine their health, and destroy their future prospects. A third will think of commerce, of the advantages resulting from it, or of the dissipated life which affects so profoundly the man of high morality, &c. Hence we have no trace of associations depending on pretended natural affinities between ideas, but an evident association founded on the predominance of instincts, habits, and sentiments; or, in other words, amongst the thousand perceptions which the spectacle just alluded to may produce, those alone will take effect which are seconded by our predominant cerebral faculties; or, if you like the following formula better,—The predominant faculties will commence acting under the influence of that particular idea, or perception, which is best calculated to excite them. This is a truly natural association; and remark how perfectly it agrees with our first proposition in moral and intellectual physiology, namely, that *the sensitive stimuli act on that organ which is most disposed to re-act on external bodies.*

What is Sympathy?

The philosophers have discussed the question of sympathies at great length; they have given them a kind of undefined existence, on which they have expended a quantity of very fine phrases; in fact, sympathies and antipathies form an agreeable text, provided we mix a little of the marvellous with them. The writers now alluded to will quote examples more or less striking, which they dress up in colours more or less varied, making, as I said before, some very pleasant histories; but at the end what do we find well demonstrated? Phrenologists intervene and tell us, sympathies are nothing but similitudes of faculties; thus, you have a taste for such an occupation, so have I; let us follow it together. You love reading; so do I. Here is a sympathy. You love good cheer; I am of the same mind. Here,

again, is sympathy. The same phrenologists however, add, that certain passions repel one another. Thus, two misers, two covetous men, will never sympathise together, except when they can satisfy their passion without interfering one with the other; nay, more, if one sees that the other has an advantage over himself, he experiences a sentiment of antipathy. This is seen in all criminals who unite together for villanous purposes; the crime being committed, their antipathies awake when they come to a division of spoil. Hence a similitude of organs alone is not sufficient to explain sympathies. Here, again, are some other facts, which the phrenologists have neglected to examine. You often find a great talker sympathising with a silent person, because the latter seems a good listener. An individual who loves power seldom sympathises with another who likes to dominate as he does. Hence the reason why we seldom find husband and wife completely sympathising in the wedded state; and this is seen not only in the bond of marriage, but in every other connection possible. Thus, the definition of sympathy, as given by the phrenologists, does not seem to me very clear, independently of their observation that all passions essentially egoistical repel one another. There are various other shades of sympathy. In some cases we experience a physical sympathy: we see a person, his exterior pleases us without our knowing exactly why, and we form an attachment, which may or may not be judicious. Love comes under the same head; this passion is often a sympathy, for we never regard all individuals of the opposite sex with an equal degree of love; we admire some above the rest; at first the external appearance attracts us; then come the influence of company, intimate relations, and, finally, we find reasons for antipathy, causing the most empassioned lovers to separate the moment they know each other well. Besides this, it often happens that two individuals sympathise for some time, because each makes a sacrifice to the other; but the charm of love is soon dissipated; the natural character of each breaks out, and antipathies of the most violent kind are engendered. Friendship is subject to the same accidents. Thus, you see, it is difficult to determine the exact meaning of the term "sympathy." Those who sympathise with us are individuals who procure us moral and physical pleasure, and in whom we generate reciprocal sentiments; but this supposes a combination of faculties, seldom or never in opposition—combinations which the want of time prevents me from examining on the present occasion. Sometimes we see two friends united by a similarity of taste, ardently desirous to satisfy it, and marching together towards the same object; envy springs up, and their sympathy is on the point of being broken; one, however, makes a sacrifice to the other, because his organization permits this concession, and in other respects he feels satisfied; the bonds of sympathy, so nearly thrown off, are drawn tighter, and their friendship continues undisturbed. Generally speaking, sympathy is explained by the combination of organs of several individuals: if this combination be such that the individuals never cause one another pain, or are placed in opposition, then sympathy exists; but in most cases it can be perfect only between two persons.

Habits of a Man.

Philosophers often cite the influence of habit, to explain the actions of man. Since phrenology commenced making progress, its adversaries are particularly fond of quoting habit, and saying—"Education and habit enable a man to do several things for which he has no innate disposition or organ." We might answer, without hesitation, "Nothing is more erroneous. Habit never gives a remarkable facility, unless supported by organs corresponding with the object on which we exercise ourselves." How many people do we see obstinately cultivating a science or art for which they were never born; hence you never find them successful; they become victims of their obstinacy, and, obeying an impulse which must remain fruitless, neglect to cultivate their predominant faculties. Sometimes *amour propre*, sometimes a love of money, incites them to take up a subject inconsistent with their organization. Hence we see so many men who wish to become authors, in spite of Apollo and Minerva; so many others who obstinately cultivate painting, without ever making progress in the art. A man imagines himself endowed with some talent he does not possess; he sets himself to work, but his labour is lost; habit is unable to give facility, it merely diminishes the difficulty. Compare with him another who possesses a well-developed organ of the same faculty; the one advances slowly, and with effect, or remains stationary, while the other surpasses him without seeming to give himself the least trouble. These errors are excessively common; however, these are questions of education. A parent can no longer say—"My daughter has little musical talent, it is true, but she may become an excellent musician with a great deal of practice;" or, "This boy has little taste for the sciences; however, he shall be a naturalist, or a medical man;" "He has little or no talent in speaking, yet I will make him an advocate; the proverb says, *Fiunt oratores.*" All errors. A man will never become distinguished in any occupation for which he was not born; as to oratory, the *fiunt* can only apply to persons who, though their language is as yet a little difficult, possess superior faculties, which may at a future time give it the elegance and facility it

wants. Remember what we said on this point, when treating of the organ of language. Besides, the philosophers, in giving too much influence to the power of habit, have been deceived by a fact of daily occurrence, whenever the organ of any faculty is strong; when that is the case, every thing connected with the faculty is done so easily and readily that they appear, as it were, natural to the person, and the whole merit is bestowed on the persistance of labour, depending, as they say, upon habit. They do not see that the love of work depends, in these cases, on the facility of executing, and on the success necessarily following the facility. The philosophers say, "Work and you will succeed." Parents are constantly victims of this prejudice. A clever man, who has experienced, in himself, the greatest facility in contracting the habit of any art or work for which he was born, imagines that his son can acquire the same facility if he wishes to study, and attributes his distaste to idleness, without ever reflecting that his organization may be different from his own, and thus lead to different tastes and habits.

Tastes, and Hereditary Tendencies.

Taste is also erected into a peculiar entity. Phrenologists, however, have not neglected to investigate the question. It is important, like all the preceding ones, for the different words whose true meaning I endeavour to lay down are constantly in the mouths of journalists, romancers, and literary men. What is taste? It is the aptitude of passing a correct judgment on any work, whether physical or moral; and this aptitude is the stronger in proportion as we have the analogous organ well developed and well exercised. However, to possess what is called good taste, we must not only possess the special organ of the work we judge, but also the superior faculties, and judgment. In proclaiming this truth, the phrenologists have rendered service to the whole range of sciences and arts. After what has been said, you feel that such happy dispositions must be more or less hereditary. We do not possess them of necessity, because they existed in our parents; but it is much more reasonable to attribute them to the latter than to chance. Besides, what does the word *chance* signify? At least, our faculties must follow the race to which we belong. A Carib, or a New Zealander, would never beget a great poet, nor a distinguished painter. In many cases our immediate parents do not possess the faculties which we have; but some of our ancestors had them. It is impossible to deny hereditary influence, for whole nations present us examples of predominant organs, particularly such nations as have mixed little with others; but in people whose generations have frequently mixed with those of neighbouring nations, like our own, we cannot count any immediate hereditary influence; sometimes we follow our father,—sometimes our mother,—at other times the grandfather, or even some more remote stock. What I have just said concerning hereditary influences, extends beyond taste. The latter, however, is connected with aptitudes, and aptitudes, again, exist in nations, races, and peculiar families, being regularly reproduced when little crossing (as it is called) has taken place; but very irregularly whenever nations, races, and families intermix much with one another, as they do at the present time. Consider, then, the question of hereditary influence as applicable to all the faculties which form the subject of phrenological investigation.

Sleep.

I take up now the question of sleep. What is sleep? Metaphysicians say, "it is the repose of the brain." It is certain that during sleep some parts of the brain act with much less energy than others. The hemispheres, and particularly the superior-anterior regions, seem plunged in a species of inaction. In the first place, we are withdrawn from the influence of the external world, for the senses cease all correspondence with their usual stimuli. The senses are powerful instruments of rectification, provided the interior of the brain be not too excited, or in too great a degree of torpor. The sight of objects often suffices to bring back reason, but the delirium of sleep seizes us after the eyes are closed.* But, when all the senses are in repose, and the cerebral organs corresponding with them diminish their action, then reflection ceases also, and the organs of our sentiments and passions enter into a state of repose. If all

* We can verify this on our own persons, either by opening the eyes ourselves (when we can), or by making another individual open them as soon as dreams commence. It is also seen in several persons labouring under fever, who cease their muttering delirium as soon as we make them open their eyes. This shows that light is a most powerful stimulus of the brain, and hence the first act of the instinct of sleep is to close the eyelids, in order to shut out light. This closure, depending on muscular contraction, and not on relaxation, is an active phenomena, imperiously commanded by the instinct. It must be arranged under those antagonisms of which the brain presents several examples, and of which we cannot discover the secret. The levator palpebræ superioris is, undoubtedly, the antagonist of the orbicularis, and their nerves must come from antagonist points of the brain. However, anatomy throws no light on the cause of this antagonism, nor on that existing for the cerebral nerves, distributed to the antagonist muscles of respiration and locomotion.

the organs just mentioned repose together, sleep is complete; external objects are no longer represented; the domain of instinct and feeling ceases to prevail; every sentiment is at rest. The inferior portion of the brain, which presides over respiration and circulation, is the only part that does not sleep, though its activity is much diminished.

Man, however, does not always enjoy this perfect degree of repose; in many cases rest is interrupted by nervous or inflammatory irritation of the viscera, which we have seen act constantly on the brain. Sleep then ceases to be complete; and still less so can it be perfect when the brain itself is the seat of irritation, unless, indeed, the latter has produced effusion, or compression of the cerebral substance. Here we find evident causes of imperfect sleep. We cited inflammation as a cause deranging sleep; but the same effect may be produced by a variety of irritations purely nervous. These sometimes have their seat in the viscera; difficult digestion for example; sometimes in the circulation, from irritability, or impeded action, of the heart;* finally, sometimes in the brain itself, for examples of which we may quote all the passions. Thus, besides the morbid causes of deranged sleep, we find several natural, or normal, ones, inseparable from the condition of man in society, and much more frequent than the former. But, certainly, some portion of the body must necessarily repose during sleep. What is it? The senses: and with them the receptive and reflective organs. This is necessary. You cannot conceive sleep existing without a cessation of the action of our senses, and, consequently, without a remarkable diminution of action in the perceptive and reflective organs, which immediately correspond with the senses.

We say *diminution*, for although a person in light sleep cannot see, he may hear; however, neither noise nor articulate sounds awakes him as the impression of light does. During light sleep we can hear the words of an orator, or a person reading; but we neither reflect on their meaning nor remember them. However, if any irritation of the species already described should exist without being sufficiently strong to awaken the senses, or the organs of perception and reflection, the instincts and sentiments become acted upon, and awake, excite the organs of ideas, and make them act under their influence. "But why the latter?" you may ask me. Because the organs of reflection can no longer be corrected by the senses and perceptive organs, which alone connect us with the external world. Before sleep sets in, the organs of thought and the superior intellectual faculties were under a double influence,—that of the senses and perceptive organs on the one hand, and that of the instincts and feelings on the other. During sleep the influence of the former disappears; the mind is entirely under that of the instincts and feelings: hence the aberrations of our intellect, and the power, without limit, of the instincts and feelings over it. The miser dreams of riches; the lover of his mistress, enjoying a possession which, alas! vanishes with his sleep; the ambitious man dreams of power; the religious man, dominated by a sentiment of marvellousness, is transported to the highest heaven; in a word, each individual is in a state of true delirium, which we have qualified by the name of dream. This continues until sleep having ceased through the reintegration of the action of the senses and perceptive organs, those of thought are again brought into connection with the external world, and the balance of intellectual enervation is thus restored, because the organs of thought, being no longer enfeebled by sleep, and being now supported by the senses, resist the influence of our sentiments and instincts, and represent things such as they really are.

The preceding reflections seem to render the following explanations necessary. When the health is perfect, and a person dreams, sleep appears to offer us the satisfaction of all our desires; on the contrary, when the viscera are the seat of irritation, or of confused and obscure pain, we experience in our dreams some obstacle to the satisfaction of our wants. A pupil of the military hospital of Val-de-Grâce wrote a very interesting thesis on the subject of sleep, considered as a symptom of disease; he regarded dreams so far as they might become signs of some existing malady. The following examples will give you some idea of this theory:—When the blood circulates with difficulty through the heart and lungs, the person is affected with night-mare; he attempts to fly, or, at least, to withdraw himself from the weight of some body which compresses the chest and throat, and reduces him to a state of immobility. The agony is excessive so long as sleep continues. Patients affected with disease of the abdominal viscera have melancholy dreams; they experience some misfortune, or believe themselves guilty of some crime. The conformation of the brain must also exercise its influence over the nature of these morbid dreams; but the examples given show that the memory of ideas is always influenced by a consecutive suffering of the brain.

Somnambulism.

Somnambulism next demands our attention. Somnambulism, independently of any morbid state, must be distinguished from every other species of dream; however, we always find certain points of resemblance

* Coffee produces insomnia, by augmenting the nervous irritability, and accelerating the circulation.

between them. Here we are forced to admit, as a fundamental fact, the cessation of the action of the senses, and, consequently, the cessation of stimulus on the perceptive organs,—a circumstance which leaves the reflective organs at the mercy of our instincts and feelings. However, we consider the distinctive character of somnambulism to consist in an excitation of the reflective apparatus, infinitely more regular, and nearer the normal state, than what we see in any species of dream. The limits of our course will not permit any further observations on this curious subject, which, besides, would require a work *ex professo*, and based on a great number of facts.

Gestures of the Faculties.

The important question of gesture has not been neglected by the phrenologists. When under the influence of feelings, instincts, or the intellectual faculties, we employ gestures which are descriptive of what we feel. These gestures, you may say, are taught, are artificial. No, Gentlemen; we may perhaps improve them by the addition of grace and dignity, &c., but at bottom they invariably remain the same. Thus, a man excited by passion will always contract his muscles, and make a movement as if he were about to dart forwards on his enemy. Even animals present the same spectacle. When affected with terror, their muscles become relaxed, or contract when the animal prepares for flight. An animal under the influence of hope is seized with vague and uncertain movements, like the dog, when his master is preparing to set out, and take him with him. The proud man elevates his head and advances his chest, looks round him with an air of fierceness, contracting his eyelids, and regulating his features to give himself an air of dignity. If he hears any thing calculated to wound his feelings, the condition of muscular action just described becomes instantly more marked, and he assumes an expression of compound pride and indignation.

The essence of the action remains the same, whether it be done in a coarse and rustic manner, or according to all the rules of the stage, for it is dictated by nature. I might pass the different organs in review to justify this assertion; but the question has been so perfectly treated by Gall, that it would be superfluous. My attention was merely to direct your thoughts towards this gesture, or power of mimicry, and show you how each passion, each sentiment, and each instinct, determines a peculiar movement in the muscles of the limbs, face, or respiratory apparatus. In many cases even the circulation is so far modified as to produce a change of colouration and heat in the face, which bears a constant relation to such or such a passion. Besides, the modifications resulting from excitement are not confined to the exterior of the body; they extend to the viscera, and pathologists will tell you how numerous and powerful are the moral causes of our inflammatory or nervous affections. All these facts, relating to gesture in general, may be ranged amongst phenomena which *spiritual* gentlemen could never have divined. Gall was the first to explain them in a complete manner; the physiognomists, indeed, had made them a subject of study; but they were left far behind by the illustrious founder of phrenology, in the descriptive application of the gestures to our passions and intellectual faculties. You will now permit me, I trust, to lay before you my own views in explaining gesture. I do not pretend that they are complete; I merely wish to communicate them, leaving to you the application. I said, that the motile fibres distributed to the muscles were connected thoughout the brain with the organs of our different faculties, and I repeat it again, it is this which constitutes the enormous volume of the brain. It results from this organic disposition, that each faculty possesses a direct influence over the muscles, without being compelled to address itself to the personal sentiment or, "I." That it is not necessary for my cerebral organ to address the "I," and say, "permit such a muscle to move in such direction," is proved by the existence of gesture in animals, and in infants as soon as they commence placing themselves in relation with the external world. It is also demonstrated by the manifestation of gesture taking place without any kind of consciousness. We find ourselves imitating, that is, assuming such or such an attitude without thinking of it. But however little attention is requisite, the brain must enjoy perfect health; for the moment it becomes diseased, our gestures are modified, and obey the morbid impulsion. The basis of the phenomenon, however, remains the same. These facts prove that we cannot admit the existence of a *sensorium commune*, governing and perceiving every thing. Add them to the intermittence of the personal sentiment and volition, to their tardy development in the child, and the disappearance, long before death, of the feeling of personality, and you obtain direct proof that the presence of a common centre is not necessary to explain the phenomena of the human mind, and, consequently, that Gall was justified in denying its existence.

Abstracts.—Man's Knowledge of the Divinity.—Doctrines of Theologians.

Gentlemen:—There is a subject on which I will yet say a few more words to you, that your notions of the light in which I think it should be regarded, may be rendered quite clear, for it is one on which to be in doubt or obscurity is more perplexing than any other to the human mind. We cannot know much of the Divinity; but we ought

to be enabled to separate that which we are assured is true from that of which we may entertain doubt. I must revert to the organs of causality and comparison, and to the formation of abstract notions by the agency of those organs, in order to lead to the points which I would develop more fully. The discussion of "abstracts" might have been carried farther at the time I was explaining their formation (Lecture xviii., page 910), but as the topic of the Divinity is isolated in itself, some remarks on abstracts, through which I will lead to that topic, may be consistently supplied here.

The reflective faculties, Gentlemen, are those to which I advert. I perceive two or more objects in the world; I find in them points of resemblance, or great differences. I compare those points, and endeavour to be fully master of the similarities, or the oppositions. This constitutes what is called "comparison," "induction," "judgment;" and the operation of judging removes the qualities of the bodies from the substances themselves, and transforms what I have thus removed, into abstracts; and then, by a licence of language, improper in itself, but useful in the expression of our thoughts, I call those abstracts by so many names of substances, or things. Now, we are constantly employed in making collections which are afterwards embodied in an abstract term. These abstracts are commonly denominated nouns collective. Thus, men, considered without any distinction, are termed man, humanity. In the same way brute animals are called animal, brute. Even each species of animal is designated by a peculiar noun collective, as quadruped, bird, reptile, &c. A collection of men who administer any affair, is called an administration,—an abstract term which is also applied to their actions. A portion of land in an inhabited country, is called province, county, &c.; if we add the idea of government, we call it kingdom, empire, &c. An assemblage of judges is termed the magistracy. In the word justice, which really designs a manner of action of the brain, we confound the acts of judges, their persons, and even their agents. A troop of armed men is a regiment; a collection of regiments is denominated under the collective term army. It would be tedious to enumerate more examples. It is thus apparent that nouns collective are abstractions, since the attention is withdrawn from the individual to be fixed on the mass, or on the name embracing the mass, and hence the substance necessarily disappears with the individual. It is easy, in all these cases, to recover the substance whenever we unite abstracts of this kind with verbs or adjectives, because the reader never loses sight of the mass of living beings which served as the means of forming the abstract; while, on the contrary, abstract terms representing cerebral actions, can seldom or never be discovered by the public, who are unacquainted with the circumstances of anatomy and physiology on which they depend.

We also make abstracts of inanimate bodies, but still those abstracts are derived from the exercise of our perceptions. Thus, a library is a term dependant on a collection of books; a domain consists of fields and woods; a city is formed by collecting houses together; a magazine, by assembling a depôt of various objects for sale. But remark; these latter terms are less likely to be employed in an obscure manner by speakers, for their attention is less easily distracted from the substance than when we speak of living bodies, where the substance is almost always confounded with its actions or functions. If I contemplate a body in motion, I can put aside, or forget, the body, and consider merely the motion. Here I abstract. If the motion of that body be constant and equable, I abstract again, and form the sign of regularity, of constancy. When I wish to walk directly to an object, I imagine a right line passing from myself to that object, and I call it a rule. In the same way I suppose that the movements of bodies are subject to a similar rule, and I call them regular, that is to say, constantly following the same line or rule.

The voluntary act by which either I, or any other individual, follow a similar rule, I denominate law; I then apply this to the movements observed in animate or inanimate objects, and I say, they follow a law, or laws. Thus laws are separated by me from substances, and applied to movements. They become abstracts.

I feel my strength acting on a body to produce motion; that force becomes, to me, the cause of motion. I apply this knowledge to a body acting on another body, and I say that the first possesses a force which moves the second; thus I create an abstraction, a force which I transform into a cause of motion, and I discover similar causes operating on all the objects of nature. Forgetting, however, that these forces, or causes, are primitively nothing but modes of existence, inseparable from my cerebral nervous system, I transform them into bodies; that is to say, I apply to them substantive terms, and couple them with epithets which strictly belong to matter alone. Whenever I describe them as acting, I employ the very verbs and adjectives which are usually coupled with material objects. I say, "The effect of this is small, great, constant, irregular, powerful, &c.," or, if I have transformed the organ into a cause, I say—"This cause repels, prevents, aids, &c."

When I act myself, I feel that I can continue or discontinue my action. Hence the idea of power is created; for each verb has its corresponding or representative substantive. The word power, however, has a

double signification, sometimes it expresses the simple fact of a power, or cause, whose existence is proved by the action which it performs. We have always the power of doing what we do. Sometimes it is employed to signify a choice of acting, or of remaining neuter. "Quos ego," said NEPTUNE to his rebellious tempests. Thus, you see that the idea of power results from our physical organisation. I simply separate this phenomenon of power from myself, or an object or a substance which displays it, and erect it into an abstract, and then clothe it with certain attributes of bodies, according to my fancy as a speaker or a writer.

Follow me yet a little farther. With force and power, we may take a wide range over the objects of nature, and in reviewing them our attention is struck by some effect. Examining it carefully, we discover its cause, or producing force. That cause, however, is found to be the effect of a second force, and that second of a third, which is more powerful still, and more elevated. In this way we ascend, if our perceptive and reflective faculties be good, to a primitive cause, and that we call force or power, for every cause is a force, and every force *may* produce, since it *does* produce.

But it requires the whole application of our intelligence to discover even a portion of the causes and effects which operate in nature,—to perceive the links which unite them, or to enable us to feel the beautiful harmony and order which prevail throughout the natural world. At length I acquire a feeble notion of the final link, or first cause of this chain of effects, because I find the model of that cause in myself,—because I myself am often a cause, and my own organisation stimulates me to arrange my own affairs with order and harmony. Possessing the inexplicable faculty of induction, I conclude that an intelligence which is similar to my own, however superior, has produced the vast chain of causes and effects,—the harmony, order, and regularity, which I observe in the external world, and as I cannot separate all this from force, I pronounce the power which produced, and still preserves, the universe, to be intelligent, like myself. At the same time I say to myself, "It is not I who produced these evidences of powerful intelligence;" and I conclude at once that I also have been produced by it, and really am made after its proper likeness.

It is evident that when once man has compared the Supreme Being with himself, on the score of intelligence, he will evince a tendency to compare himself with the Divinity on every other point. Thus, as we know that our own intelligence is incapable of acting without a body, we clothe the Supreme Being with our own perishable flesh; we give him bones, muscles, nerves, and all the faculties which we denominate "cerebral."

Gentlemen, this is the light in which every system of religion represents the divinity. Without copying man and his attributes, the idea of GOD would remain sterile in the hands of theologians; they are compelled to employ verbs and adverbs whenever they describe him as acting or feeling,—adjectives or attributes to qualify his properties,—and they can find no other terms than such as belong to men, and are derived from the actions of men; unless, indeed, they follow the example of certain theologians, and disfigure the Supreme Being with the actions, passions, and properties, of the brute creation. The Catholics, who fancy themselves the most refined and subtle amongst religious sects, have fallen into this error, when they assimilate two of the three persons of the trinity to animals, and dress out their angels with gilded wings, to enable them to traverse the immensity of space.

Philosophers of the present day aspire to a degree of refinement, which is more exquisite than that of the most orthodox Catholic; they avoid describing the primary cause of all things, otherwise than by indicating its effects, or action, yet they find themselves subject to the same tribute which man invariably pays to his perceptions; for they can never bring any force into action without adopting the verbs and adjectives which belong to material bodies, and were formed to describe their actions or passions. All the objects of nature, whether animate or inanimate, may furnish signs which designate action; but the symbols of passion can only be found in man and animals. Hence the most metaphorical philosophers are unable to speak of the Divinity without giving him the attributes of matter, unless, indeed, they make him a simple phenomenon of conception. From the preceding observations I conclude, that all our abstract ideas are modelled on natural substances (*concretes*), and that what is called spiritual is merely a phenomenon of perception, or of feeling; for the moment we quit the feeling, or notion, to reduce it to language, we are compelled to dress it in the form of a substance. The following remark, however, is important:—

When I feel within myself the notion of cause, the sentiments of veneration, respect, adoration, astonishment, self-esteem, &c., I cannot find any terms to express what I feel. This happens chiefly in youth, to the thoughtful student as well as to the artist, to the lover as to Saint THERESA, or Saint MARIE-A-LA-COQUE; to the impassioned poet as well as to the author of the *Oraisons Jaculatoires*, &c. Yet in these states of excitation words abound and language is prolix, as it ought to be; for the enthusiast thinks he can never express his feelings sufficiently well. He adds metaphor to metaphor without order

and without measure, and when fatigue compels him to silence, he thinks he has left half his tale untold. All this is explicable. Sentiments become fortified in proportion as we give them expression; notions also become more energetic in the individual who seeks to reduce into language the fruits of his observation or his thoughts. It is the principle which contributes to keep up the notion of spiritualism engendered by ignorance. We exhaust the stores of our language in dressing up our feelings or notions; external objects refuse to lend any further attributes, and, unable to find either terms or objects of comparison for the residue, we place it above bodies, and endeavour to separate it from the material world. Such are the sentiment of personality; the notion of cause, power, duration, space; the feelings of love, hatred, &c.; all these being incapable of expression or comparison, are regarded as beyond the senses, placed above material objects, and denominated, accordingly, spirit. Here is the secret revealed to us; but the charm exists only for a few who can feel it, and not for all. This is proved by experience. A cool observer, possessed of natural science, and capable of judging as well as of feeling, arrives, and, taking the brain at its earliest stage to follow it through all the phases and accidents of life, he demonstrates that all the phenomena of instinct of feeling, and of intelligence, are directly proportioned to the various conditions of the brain. He does more. He applies his faculties of comparison and causality to the facts discovered by him, and proves that they, in turn, are modes of action of the brain, aided by other organic apparatuses.

How can we refute reasoning of this kind? Metaphysicians, who condescend to reason by employing abuse, have recourse to the notion of *substance*, and say, "The substance which thinks and feels cannot have parts, that is to say, it is not material:" but we ask them where they got their notion of substance? It is evidently derived from the matter; *substans* from *substratum*, and they are forced at once within the circle of the perceptions communicated by our senses, for they can no where find an *immaterial* substance. It is true that they give their perceptions a *substratum*, but how? In comparing it with matter? But, if they adopt personality, and make the personal sentiment ("I") the *substratum* of perceptions, they are refuted by observation, which demonstrates its existence in a particular portion of the brain. In fact, how separate this sentiment from the brain? Where place it? Are we to give it an immaterial *substratum*? This is a mere hypothesis; one, moreover, borrowed from matter; for this very *substratum* can only be defined or described in words which represent bodies. Where, then, do the spiritualists take refuge? In their feelings? Diving from one absurdity to another, they seek protection on ground that admits of no debate, and rally their scattered forces in declaring, that a feeling more powerful than any demonstration which compels them to regard the phenomena, we observe in the vast and wonderful field of nature, as the production of some immaterial substance.

Modern psychologists repeat, without end, (for they can find no better argument), that the feelings, thoughts, volition, liberty, emotion, passion, ideas, induction, in a word, all the intellectual and moral phenomena, are not capable of being perceived by our senses, and are, therefore, immaterial. I confess this stupid simplicity annoys me in a considerable degree. Whoever pretended that the phenomena of bodies were of the same nature as the bodies themselves? We perceive bodies and their phenomena. Prove that the acts just named are not phenomena of the nervous system? That would be sufficient; but you will never convince us by repeating that it is a substance, or a non-nervous matter, which produces them, through the medium of the nervous substance. Suppose you undertake to demonstrate that it is an imponderable which produces these phenomena through the medium of the brain; we might then comprehend what you say, and answer, "An imponderable acts on the senses like any other body." On the contrary, when you create a substance altogether beyond the reach of our senses, yet at the same time clothe it with all the attributes of a material body, it is impossible for us to understand each other; when you call a phenomena an acting substance, you are far from having transformed it into an acting substance; you employ a metaphor, and nothing more. Load, as long as you like, your "I," or the intelligence, with attributes derived from bodies: say, for example, the "I" is active, that the intelligence is pure, beautiful, sublime, &c., all this is unable to erect these phenomena into incorporeal substances, for the term substance can only belong to bodies, and bodies alone can be pure, or active, sublime, or beautiful; in doing so you employ metaphors.

It is at the same time certain, that the intelligence, and its different manifestations, are inexplicable phenomena of nervous action, and that we can never explain them by the supposition of a non-nervous principle, because, once for all, the term "principle," borrowed from external objects, as well as "substance," compares them, *mal-à-propos*, with matter. I repeat *mal-à-propos*, for matter and the phenomena which passes in it, are two different orders of things, so different that we have one set of organs to perceive bodies, and another to perceive the changes they may undergo. In the same way our emotions, founded on our perceptions, are not the same as these latter; each class of phenomena is associated with a different set of organs, and varies, *ad infinitum*, in the vast

chain of animal creation. We entreat all who are made to reflect and not to declaim, to reflect on this subject with the care it merits.

Thus we find the psychologists without any means of demonstration, and reduced to tell us, "I feel this, and am convinced of it, though its truth was never proved to myself, nor to any other being in the world." Society is, therefore, divided into two great fractions:—One comprehending men who refuse their convictions to anything short of proofs; the second, embracing a class of philosophers who are content to abide by their feelings, and disdain any species of proof whatever.

I cannot treat the question before me in a complete manner without noticing an argument which is frequently employed by the spiritualists:—"You simply advance an hypothesis," say they, "when you conclude that the intellectual phenomena are produced by the brain, because there is a perfect relation, or accordance, between the various states of the organ and the phenomena of the intellects. This is nothing but a coincidence between the brain, which acts, and the soul, which thinks, or directs." "There may," say others, "be a perfect accordance, but not production, for a compound material body could never produce a simple immaterial substance; feeling, perception, thought, &c., require a spiritual substratum, as the brain requires a material one. Each has an existence independent of the other, and when you advance the contrary you support an absurd hypothesis."

Philosophers of all sects are wonderfully fond of the epithet "absurd;" but let that pass, and let us examine their objection. You shall see how phrenology explains it. In upbraiding their adversaries with having recourse to hypotheses when they affirm that the brain produces thought, &c., the spiritualists employ reprisals, and throw back the argument of the materialists, who long ago reproached them with imagining uselessly a spiritual cause, when a material one could be discovered which is cognizable by the senses, and supported by reason. The reproach of inventing hypotheses seems to have annoyed them, and at length they found comfort in throwing it back. The sentiment is natural enough; but on what do they found *their* reproach? On the idea that thought is simple and the brain compound, and on the impossibility, according to them, of making it reside in one molecule of the brain rather than in another. "Hence, (say they) the necessity of placing thought elsewhere than in the brain," neglecting all the while to explain themselves on the perfect coincidence between the various conditions of the brain and of thought. What right have they to say that thought is simple? Such an assertion becomes, indeed, absurd, for thought does not exist as a substance, but as a phenomenon of the nervous system. This answer, alone, is sufficient to overthrow their argument.

THE METHOD OF OBSERVING IN PHRENOLOGY.

Let us terminate the lecture by a few remarks on the method of observing in phrenology. The principal question from which the means of clearly describing this method are derived, has been already treated in full. We shall, therefore, set out from our three grand divisions:—The Instincts, seated in the posterior and latero-inferior portions of the head; The Sentiments, occupying a more elevated position; and, finally, The Intellectual faculties, divided into receptive and reflective.

When you wish to study a head, first establish this division in your mind, and then ask yourself which of the three regions is predominant; the instincts, the sentiments, or the intellectual faculties. You should avoid entering immediately on the special organs; it is much better to practice yourself, at first, on these three divisions. I may now point out to you the limits of these divisions, or regions: the instincts form the lower layer; behind they ascend over habitiveness, and descend under circumspection, to join the intellectual faculties. The sentiments occupy the upper part of the head; they commence above habitiveness and self-esteem, and are bounded by circumspection, consciousness, hope, marvellousness, and ideality, and advance forward to the edge of goodness. Below goodness and mimicry you find the two noble faculties, comparison and causality; all the rest of the forehead being occupied by the receptive faculties.

Now, if you wish to estimate the intellectual region, draw a line from the anterior edge of constructivity, which must pass obliquely over the summit of the head, between benevolence and comparison, and let it terminate at a corresponding point on the opposite side; all that lies in front of this line belongs to the intellectual faculties; all behind it to the other two divisions.

It now remains to distinguish the latter, which may be done in the following manner: you trace on either side a semicircular line, commencing, as before, with constructivity, and making it pass above acquisitiveness and secretiveness, but below circumspection, you continue it between love of approbation, and affectionateness and self-esteem, until it terminates in the upper part of habitiveness. The portion above this line belongs to the sentiments; all that lies below it to the instincts.

Having taken the distances just mentioned,

it will be easy for you to judge which of the three regions is predominant, or whether they are not all developed in nearly the same proportions. Do you wish to know if your appreciation has been exact? You set out from the auditory foramen, and trace three semicircular lines, one passing round the back of the head, above the occipital hole, and terminating at the opposite auditory foramen; the second, mounting over the summit of the head, and equally ending at the auditory opening; the third embracing the most prominent portion of the forehead, and meeting the two others at the point already indicated. It is then easy to determine which of the three semicircular lines has the greatest extent, for you may measure them with a bit of tape. Your first point of general comparison being thus established, you may proceed to determine other points, and ascertain the relative proportion of the organs composing each of these three masses.

You have to consider in each organ the length, or distance, of its further extremity from the auditory foramen, and its breadth. Hence you must not confine your examination to merely measuring with a thread the distance of each organ from the auditory foramen; you must also trace the semicircles just described, and bring them over all the prominent organs of different heads, noting those which are most developed; besides, with a little practice, your eye will always assist you in determining the length and breadth of each organ. Let us now make a few remarks on the three masses.

By examining the anterior region you obtain an estimate of CAMPER's angle. CAMPER laid down, as a rule, that the sum of intelligence was proportioned to the obtuseness of the facial angle. This disposition, it is true, most frequently depends on a large development of the superior organs of the forehead; but it may so happen that while the latter are powerful, those of the inferior line may be still more strongly developed. SPURZHEIM made the section which I now show you, to resolve this difficulty. If you examine the head as he divided it, in profile on one side, the receptive faculties will appear feeble (though in reality well developed), because the lower part of the forehead is on the same line as the upper; and this depends on his having cut away the prominence of the frontal sinus, by which the frontal angle appears a right one, and the superior faculties seem to predominate. If you examine the profile at the other side, you are struck at once with the projection of the frontal sinuses, which have been left untouched. This projection, as you may perceive, is so considerable, that the upper part of the forehead, instead of being prominent, seems on that side to retreat. However, if you measure the distance from the auditory foramen to the organ of comparison, you will find it as great on one side as on the other. This shows, Gentlemen, that we should never content ourselves with simple ocular inspection, if we wish to form an accurate judgment of the intellectual faculties, but should measure exactly the space which separates each from the auditory orifice; for, as we have seen, the superior faculties may be well developed, though they seem masked altogether by the projection of the frontal sinuses.

General LAMARQUE presented an example of this conformation. Look at the cast of his head; suppose the frontal sinuses removed, the distance from the ear to the lower line of the forehead will still be great, while the upper part, which now appears retreating, would be placed nearly on a level with individuality and locality, and the frontal angle would become almost a right one; yet nothing has been added to the upper region of the forehead; we have only removed, in idea, the prominence of the frontal sinuses below. These observations show you that LAMARQUE was a man of superior talent, although the inferior faculties seem to dominate the more elevated ones. We have divided the head into *three masses;* but to aid you still more in your observations, we shall now *subdivide heads, in general, into a certain number of sections, or species,* whose signification we shall endeavour to establish.

FIRST SPECIES OF HEAD.

In the first species of heads the instincts predominate, while the sentiments are feeble. These heads belong to men little better than brutes; to criminals of every kind,—to children of the guillotine. I rank FIESCHI in this species, because the mass of instincts and egoistical feelings predominate over the more elevated faculties and the intelligence. Such is my opinion, though some people pretend that his head differs little, if at all, from that of an honest man.

Parricide is the most detestable crime which afflicts society: the heads of parricides are most miserably organised. Look at these two, MARTIN, and BOUTILLIERS. The first glance of your eye discovers the animal part throwing the intellectual into the shade; you may afterwards study the prominent organ of this mass, or masses; for even in the most feeble there is always something more prominent than the rest. This constitutes the study of organs in particular.

SECOND SPECIES OF HEAD.

Here the sentiments exceed the instincts and intelligence. These heads are filled with sentiment and credulity. Look at this immense mass dominating at the summit of the head,—the circle which separates the instincts from the sentiments. These are credulous, and prone to veneration in the highest degree. Marvellousness, hope, veneration,

form a very considerable eminence in most of these heads. Self-esteem, a desire of acquiring the esteem of others, and firmness, often co-exist with the faculties just mentioned; and if the intelligence happens to be feeble, you have the head of a visionary, whose dreams commonly terminate in insanity. We possess many examples of this kind, which I need not mention.

THIRD SPECIES OF HEAD.

The united intellectual faculties predominate in this species. SPURZHEIM has made the important remark, that strong instincts and passions are required to excite the brain to powerful action. We sometimes meet men in society, in whom nearly the whole brain seems placed in front of the ears; whose intellectual faculties are, consequently, developed in a beautiful manner, while courage, combativeness, the affections, physical love, &c., are almost nul. These heads possess little energy, especially of a moral kind. I say of a moral kind, for there are two species of stimuli, external and internal. Men of this description will sometimes work, because they are forced to it by poverty, social position, &c.; these are external stimuli; but as soon as their future prospects look bright they fall into the state of inaction natural to them, because they want an internal stimulus, and remain stationary amidst the progress of society; while men, stimulated by ambition, destruction, &c., are ever ready to engage in what is going on, and only renounce their active course of life when nature herself is exhausted.

FOURTH SPECIES OF HEAD.

The receptive faculties exceed the reflective. Men endowed with this organization observe for the mere pleasure of observing, but are unable to draw any conclusions from what they perceive. Heads of this kind are very common; however, I abstain from presenting you examples, for they people our learned societies, especially in the sections of natural history and mechanics, and in every merely part descriptive. There is a multitude of learned men in France who observe for the pleasure of observing, and in silence, —this is their delight. If, in addition, they possess language, their observations are a frequent theme of their discourse,—nothing more natural. Men of this class are highly necessary to the progress of science. They assemble materials, though they are unable to fecundate them by induction.

FIFTH SPECIES OF HEAD.

Here the faculties called theatrical, *viz.*, mimicry, imitation, and marvellousness, (we might even add a fourth, ideality), predominate over the reflective. Should the four organs just mentioned coincide with strong perceptive organs, then you have the head of a true artist, who executes the inventions of others in every branch of art, painting, music, theatrical representations, &c. Heads of this kind never invent, but they execute in a most perfect manner, and with great intelligence; in two words, they feel well and express well. You have poets and painters incapable of invention, who dress you up very delightful pictures, but the groundwork is all borrowed. This category embraces most artists, and men who excel in imitation.

SIXTH SPECIES OF HEAD.

Receptive and theatrical faculties, combined with elevated sentiments, strong instincts, and the higher intellectual faculties, constitute the heads of men of *genius*, who create. You must not, however, take the word "create" in too strict a sense, for man is unable to create any thing absolutely; he merely discovers new relations between himself and external objects, or between objects compared one with another; and by his talent of representation he impresses these relations on the rest of mankind; without this latter faculty he would remain, as it were, isolated from the world, in the midst of his new views and his new sentiments, and instead of being worshipped as a man of genius, he would excite our pity as a fool. This latter accident sometimes occurs to men whose views penetrate too deeply into futurity, or who advance a science with too rapid progress: their contemporaries, unable to follow their rapid course, adopt the more easy method of baptizing them "mad," and more than once have they been forced to exclaim, with exiled OVID,

"Barbarus hic ego sum, quia non intelligor illis."

This, however, is seldom seen with respect to the arts, because, as we have said elsewhere, the sentiments acquire full play with the development of their organs, and hence every one follows a great artist, while a science marches with the efforts of centuries. Genius in the arts, then, requires the co-existence of receptive and theatrical faculties with well-developed sentiments, instincts, and superior intellectual faculties. But, in the sciences, the theatrical faculties must not be too strong; to make a man of scientific genius we require the re-union of receptive with powerful reflective faculties, superior sentiments, and well-regulated, though active, instincts. This latter condition is absolutely necessary.

SEVENTH SPECIES OF HEAD.

Moderately-developed heads, and these form the great mass; a little intelligence; a little passion; every thing is on a moderate scale. These heads comprehend, feel, and execute, whatever superior minds may teach or command them; but, left to themselves, they produce nothing remarkable.

Phrenologists find a certain difficulty in diagnosticating the faculties of these people, because every thing is pretty nearly negative.

Eighth Species of Head.

We now come to a very important division. A moderately, nay, even a very inferiorly, developed head may be furnished with a single predominant organ; these are the most favourable for the study of phrenology, for they present the best examples of the influence of organs, which you can distinguish only with difficulty in heads where several organs are developed at the same time. It was on subjects like these that Gall laid the first foundations of phrenology, for men, in other respects ordinary, and of vulgar calibre, become remarkable as soon as their predominant faculty is thrown into action. Thus, one is distinguished by possessing the memory of words; another by the sentiment and representation of colours; a third by his perfect execution of musical pieces, &c.; but take each beyond his favourite subject, and he is nothing. Perhaps you may tell me, "If the intelligence is the predominant organ, they are great men." This is an error, Gentlemen. Undoubtedly they will comprehend and reason in a perfect manner, when they are forced to do so; but, left to themselves, their high intelligence bears no fruit; they neglect applying it to any great or influential principle of social life, unless stimulated by energetic passions. They belong, in short, to the class of barren geniuses already pointed out.

We have already answered the objection of anti-phrenologists, who remark that the organ of destruction does not always predominate in assassins; they also add, that several very honest men have the organ of theft more developed than professed theives. This objection is not so easily answered as the former one. If these honest gentlemen have no motives for committing theft—if the profession which they exercise furnishes sufficient means for acquiring (the primitive object of this organ)—it is easy enough for them to abstain from theft, particularly since reason must point out to them the inconveniences by which that crime is accompanied; but suppose they have indulged their passion a single time, and fall into the hands of justice; when restored to society, which rejects them, deprived of work and the means of existence, you will find them associating with the first brigands they meet, and giving full scope to their criminal inclination. Besides, Gentlemen, let us be frank: how many men are there, perfectly acquainted with the means of appropriating another's property to their own use, without exposing themselves to the penalties of the law? Society is so crowded with individuals of this kind, that it would be almost ridiculous to insist any further on the point. Reflect a little, and you will soon be convinced of the number of men, ordinary in every other respect, who are extremely clever, even superior to men of genius, in the art of satisfying the predominant organ of acquisitiveness. The faculty is aided, no doubt, considerably by cunning; but all the other organs are equally at its disposition, and however insignificant they may be, they produce remarkable results when constantly kept employed by the influence of the predominant organ.

In most of their objections, anti-phrenologists affect to shut their eyes on the mutual influence of our organs, and on the force of habit. Yet reflect, Gentlemen; does not morality depend on this? What is morality but the habitual concert of actions between our organs? Hence the precept of phrenologists,—"Exercise your organs in the interest of social order, and not in the interest of individuals congregated into sacred and profane coteries." They repent, "These organs will become strong and developed in proportion as you exercise them;" and add, "we have casts, taken at different ages, which prove that organs have continued to grow up to the age of 50 or 60 years, when the general health was good." This latter fact, at least, is a practical one, and should afford motives for verification to every conscientious philanthropist.

Ninth (and last) Species of Head.

In this last species all the faculties have attained the highest degree of development of which our nature is susceptible. These are the heads we can never discover, because human perfection is but an ideality. The hypothesis of perfection exists as little for the moral man, as it does for the physical. Where is the head without its fault? One brain is too active; another too slow; every man has his demon; every one his own foible. Man can only approximate perfection, but he finds its elements in his different organs, and in the faculties inherent in them.

Influence of Temperament on the Cerebral Organs.

We have now to take up the question of activity compared with volume; and for this purpose the phrenologists adopt the four temperaments of the ancients. As these temperaments are not very clearly distinguished from each other, I cannot agree with all that phrenologists say upon this head; however, there are certain signs by which we may estimate the force and activity of men. Our principal guides are, the development of the body, the firmness of the flesh, the muscular power, and, above all, the complete development of the principal visceral cavities. When all these conditions co-exist, we may be sure the brain possesses

all the activity it is capable of possessing. We have, then, nothing more to do than to determine its volume, and the exercise which may have rendered more or less easy the action of the cerebral fibres, for the most finely organized brain seldom produces any thing remarkable, unless it has been exercised by education; and, in the latter case, we have only to examine the predominant organs, to see whether they also have been properly exercised.

Lymphatic Temperaments.—You must, however, remark, that richness of development does not always guarantee energy of action. In lymphatic constitutions the muscular contractions are attended with little activity, and the flesh, though well nourished, has little firmness, or vivacity, in its actions; hence we should never decide on the temperament at first sight, but observe the nervous and muscular movements, and collect information on the habits of the individual before we pronounce. In other cases it is more easy to decide: there the flesh is soft; nutrition feeble; the quantity of blood small; it abounds in serum; the muscular movements are weak, &c., and in those cases we can conceive how the brain may participate in the general debility. But how many exceptions do we meet with every day! You find men of delicate habits, whose minds are most powerfully organized. The brain enjoys a life of its own. The force of the other tissues may give probabilities, but nothing certain as to the vitality by which it is animated. Besides, slow, feeble, nervous movements may produce the most firm, the most immovable resolutions, when the organs corresponding with those nervous phenomena are highly developed. Men of this temperament act coldly and with slowness, but with a perseverance which nothing disconcerts, and which is never exhausted by excessive activity of the nervous system; the results produced are sometimes immense. Activity, absolute and relative volume, exercise, and habit, constitute so many essential elements, which phrenologists should never neglect. The celebrated Talleyrand is far from being an athletic man; his constitution is, on the contrary, delicate and feeble; yet consider the immense influence which this personage has exercised over the courts of modern times. Montesquieu, also, was of a very delicate constitution, but his cerebral nervous system acted with uncommon force. I repeat again, that it is by no means necessary that the cerebral nervous system should excite violent muscular action; that the gestures should be rapid and expressive; the eyes sparkling; the voice sonorous, or loud as thunder, &c. Remarkable results are produced if the brain urge us on with perseverance towards any peculiar species of action; the most petulent men soon get tired of an irregular and fruitless resistance, which can only exhaust their nervous power, and end by yielding to the influence of reason, which, though it may be slow and gentle, is at the same time just, and constantly kept up. We may even go farther, and affirm, that courage and perseverance, though existing in persons of cold dispositions, may excite the mass of mankind to acts of force, or even violence, to which the most enthusiastic leaders would have been incapable of stimulating them, notwithstanding the moral electricity which these latter have the privilege of inspiring. How often have we seen individuals who were rachitic during their infancy, and mutilated by the effects of that disease during afterlife, who have exercised a high and powerful influence over the state of our social order, by their writings or their opinions. So true is it that nervous power is frequently independent of all other forces in the animal economy.

Nervous Temperament.—Finally, it remains to consider what physiologists call the nervous temperament,—a species of which people of the world have a very imperfect idea. These individuals are, to make use of a vulgar phrase, all nerves. The proportion of the head to the rest of the body is excessive; they are generally very thin. Their muscular system is commonly small, but the nervous movements are readily executed, and often with great precipitation. Persons of a different constitution are surprised at the rapidity with which they conceive; their quick penetration; their facility of retaining and seizing any subject presented to them. However, the health of these gifted persons is often feeble, and they are subject to nervous convulsions, attacking the muscular or visceral apparatus under very slight excitement. Individuals of this temperament present the most numerous examples of melancholy, hypochondria, and hysteria; but, should they happen to arrive at an advanced age, they often become strong and robust, notwithstanding their extreme emaciation.

This temperament is, then, very favourable to the exercise of the cerebral organs, which are commonly well developed; but avoid the error of thinking it is always a sign of moral superiority, which you will never find without a proper combination of several organs. Should the latter circumstance present itself in persons of a nervous temperament, then, indeed, you observe great results; but, if the combination be unfavourable, it produces sad personages enough. It developes a number of sentiments and intellectual faculties, perpetually neutralising each other with the most unfortunate rapidity. An organisation of this kind produces nothing but men of insignificant character. The head may be very large, but its volume is rather made up by the sentiments and motives than by the intelligence;

or, if the latter faculties should by chance happen to be powerful, the volume consists in an excessive growth of some at the expense of the rest.

Large Heads.

Hence you should never measure intellectual merit by the absolute volume of the head, but by the concordance of a certain number of organs, well calculated to arrive at a fixed object, and influence the state of social order. When several organs, tending to produce some great effect, co-exist in the same individual, and are endowed with a sufficient degree of activity, he becomes a being of a superior order, and a blessing to mankind; though his head be a few inches less voluminous than those of several other men, his superiority manifests itself, and is obeyed. Such is the solution which I offer of a difficulty which has suspended the faith of many well-thinking and honest persons. I remember hearing a distinguished professor complain that Gall could never explain why large heads were frequently less intellectual, less distinguished, than heads of much smaller volume. "Here," he used to cry, in triumph, "*here*, the sagacity of Gall was constantly at fault; how will his followers supply what their master failed in?" We cannot presume to say what Gall might have answered, but if you take the trouble of comparing what we said on organs in particular, and on their reciprocal influences, with what you have just heard, we are convinced you will make light of this pretended difficulty, without even having recourse to the supposition of disease, which we now propose to consider.

The brain is frequently the seat of chronic, insidious disease. The morbid anatomist is familiar with a variety of pathological conditions; tubercle, schirrus, indurations, ramollissements, suppurations, &c., which at first exalt our faculties, but finally depress, or even totally destroy, one or more of them, without the physician's being able to discover the nature, or even the existence, of the disease. These cases are as unfortunate for phrenology as they are for medicine. They are, however, rare; and our judgment is aided, in most cases, by the anterior condition of the intellectual faculties, by the presence of certain pains, certain convulsive movements, which almost always exist, and, in some cases, by the discovery of some external cause, such as a fall, a blow, &c., acting on the head and brain. As soon as a phrenologist, unacquainted with medicine, conceives the least suspicion of this kind, he should at once suspend his judgment, and consult a medical man. An officer, employed in the African army, suddenly exhibited habits of the most disgusting and filthy nature: he was carried off by an acute nervous affection, and Dr. Baudens found a large concretion, which weighed more than an ounce, in the middle of his cerebellum.

Excitations, resulting from the influence of some suffering organ on the brain, and kept up for a long time, will sometimes modify the condition of certain cerebral organs, and communicate a power of sensibility, a clearness, and even a sublimity of eloquence, totally beyond our reach in the normal state. This particularly happens at the approach of death. Some phthisical patients, and certain persons cut off by cancer, also occasionally present examples of the same phenomenon.

The question of delirium and insanity still remains to be examined, but it is impossible for us to take it up in the present course of lectures, which has already exceeded the limits which I intended it should reach.

Head of Fieschi.

Notwithstanding the latter consideration, I cannot terminate the lecture without making a few observations on Fieschi, whose head, as you all know, has given rise to several specious objections against phrenology. The measurements, with their accompanying remarks, have been chiefly derived from the observations of M. Sarlandiere, a most distinguished phrenologist, and inventor of a craniometer, which he employed for the measurement of the cast.

You know that the centre of the brain is supposed to correspond with the middle of a line passing from one external auditory formen to the other, a little above the occipital hole. Now, the point of Fieschi's head farthest distant from this centre, is only 37 millimetres, (26.492 lines), more than the organization of a child two months old, or of a man just above idiotcy; whilst the nearest point is only 15 millimetres, (6.649 lines), above the same organization. Hence Fieschi's head is anything but that of a distinguished individual,—it belongs evidently to the moderate class. The most prominent of all his organs is that of space, while the least developed is that of friendship; and if we can trust what came out on his trial, this man took little care whether he lost his friends or not. The volume of the organ of space shows that Fieschi possessed the faculty of measuring distances in a high degree, and hence M. Sarlandiere concludes, that he would, in all probability, have struck his mark, had he not been troubled by the sudden appearance of M. Lavocat.* The execution of his pro-

* This story of Fieschi's having been troubled by the sudden appearance of M. Lavocat, Lieutenant-Colonel of the twelfth Legion, was trumped up by the assassin before the Court of Peers, repeated universally in the private circles at Paris, and as universally believed. Having been an eye-witness of the events, we know it to be false. M. Lavocat and his legion, it is true, were

ect was certainly not deranged by friendship, for the organ of friendship is very small; it was rather veneration,—a sentiment well developed in Fieschi's head, which attached him to M. Lavocat.

The following is a summary of the predominant faculties, obtained by applying the craniometer of M. Sarlandiere, and disposed according to the organic series which he has adopted. We seize this opportunity of describing the latter, which we think worthy of meditation; we do not, however, propose adopting, or criticising, them, to avoid the confusion which would necessarily arise from comparing a new system with the one generally received. You will, however, have an opportunity of benefitting by the improvements of M. Sarlandiere, since he proposes publishing them in the journal of the Phrenological Society.

The first, or largest, of the *knowledges* in Fieschi's head, is *locality;* the principal *perception* is *space;* the principal *reasoner* is *comparison.* You see at once how this concurrence of faculties make him a natural mechanic. The chief *sentiment of conscience* is *perseverance;* the principal *benevolent* sentiment is *veneration;* the chief *egoistical* tendency is *self-esteem,* or pride; observe how the intelligence is dominated by all these sentiments. The chief *tendency of aversion* is the *carnivorous appetite* (*appetit carnassier*). This has no connection with crime, but it is a want which requires satisfaction. The chief of his *attachments* is *erotism.*

From this picture, drawn by M. Sarlandiere, we cannot doubt but that Fieschi possessed strong instincts, and selfish impulses equally well developed, and tending to the satisfaction of his instincts. We see that his intellectual powers were feeble, since his organ of comparison was not seconded by any degree of causality,—and several other intellectual organs were excessively small. But even here we find a singular coincidence, viz., that of comparison with the faculties of space and measure; however, his organ of general comparison, though incapable of producing any great intellectual result, as was proved during the course of his trial, gave rise to immense physical consequences, because it found support and aid in the organs of space and measure, —a combination which rendered him, as he said himself, a very handy mechanic.

The organs of destruction, acquisitiveness, and cunning, do not predominate; they exist, without doubt, but under the dominion of the faculties we have mentioned already.

The remainder of my task, Gentlemen, will be to claim your attention, in a concluding lecture, to certain applications of phrenology to history.

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stationed under Fieschi's window, for near an hour before the review commenced, but the writer (who is a member of the twelfth legion) can affirm, that his legion was removed from its station, and its place supplied by the eighth legion, for more than half an hour before the discharge of Fieschi's machine; the time, indeed, was probably nearer an hour. If the sight of his ancient benefactor had really made any impression on the assassin, the lapse of time was quite sufficient to efface it, and dissipate any emotion; for, I repeat, the twelfth legion had moved down to the Porte St. Denis and Porte St. Martin nearly an hour before the fatal event.—Note by Reporter of the Lancet.

LECTURE XX.—(The Last.)

Application of Phrenology to History.

Gentlemen:—I announced that our present course of lectures would terminate with a consideration of the manner in which the study of our organs may be applied to the progressive march of humanity, or, in other words, to general history. The primitive state of man is a state of ignorance. Examples of this unhappy condition have been brought to light by the discovery of New Holland and New Zealand. The inhabitants of that fifth portion of the globe possess a language, but it is extremely simple and limited. In New Holland, the least civilised part, we find but a very small number of words indeed; each word is composed of one or two syllables, and receives different significations, indicated by various sounds, or clacks, made with the tongue, or by a hissing sound of the lips; and each of these articulated signs is again repeated one, two, or three times, to augment the number of significations attached to each word; all this demonstrates the extreme poverty of their language, and, consequently, the poverty of their perceptions and notions. They have no alphabet, no written tongue; and but a few confused traditions, handed down from generation to generation. I have received this information from Dr. Gaymard, who has explored several parts of New Holland.

Nations plunged in this deplorable state of barbarity employ their intellectual faculties merely for the satisfaction of their primitive wants, or inclinations; the sentiments are merely sketched out. However, all men feel the want of congregating together; all experience the necessity of mutual assistance; but they remain absorbed in a state of stupid inaction as soon as their first wants are satisfied. Insensible to the stimulus of curiosity, they never seek objects on which to exercise their observation, and the poverty of their mother tongue confines the spring of their superior feelings. Solitary confinement, the most powerful agent in our penitentiary system, a punishment which we dread even more than torture, or capital

execution, would remain without effect on those savage men, who readily abandon society because they have never experienced its charms or its benefits.

The sentiment which springs up after that of association seems to be veneration. The effect of this sentiment, associated with hope, is seen in men addressing themselves to the strongest and most intelligent of their tribe, under whose command they rally, and from whom they seek protection, aid, counsel, and security. Their chiefs, then, become the objects of their veneration; but this implies heads completely organized. In nations who live exclusively on fishing or hunting, or the product of brutal force and pillage, the worship of a Divinity is extremely confused, because a religion cannot be produced without reflection: hence they have no religious rites, or very few. The respect of the multitude is fixed on the individual who leads them most successfully against an enemy, or directs them with greatest tact in the pursuit of prey; that man becomes an object of veneration so long as he enjoys this privilege. The intelligence, however, is active, grows with exercise, and augments the means of existence. Above the savage tribes history shows us nations of shepherds, whom observation has taught that means of existence may be more easily obtained by cultivating certain animals fit for food, than by the fatigues of the chase, or the more uncertain chances of fishing. These pastoral tribes conducted their flocks from one country to another. The world at that time was thinly peopled, and when one pasturage failed they quitted it for another, without fear of molestation or injury. The intelligence, having made this step, now discovers the means of reproducing what has been consumed. Agriculture here forms the principal agent, furnishing man and animals with food and shelter. This discovery at once gave rise to fixity of habitation; man ceased to be *nomade;* he planted his residence, and ceased to think it necessary to change. Remark how observation is always at the head of these discoveries, by gradually pointing out the means of multiplying our means of existence.

The increased number of men depending on increased facility of obtaining food, now necessitates a better social organization. The intelligence sets to work; she utilizes not only external objects, but also our instincts and sentiments, provided she finds them apt. All people, in fact, do not exhibit the same aptitude of progressing in the march of civilization. Some nations seem born to remain stationary, as some individuals can never make any progress. We might give you proofs of this in a multitude of heads which are at our disposal.

Heads of various Tribes.

Caucasians.—Look first at the Caucassian race, the most complete and beautiful of all: you shall presently see, if you lend me your attention, how every national progress is in proportion to the receptive and reflective qualities. You see the faculties just mentioned highly developed in individuals of this race; it is unnecessary to present specimens, for you have seen them in all the distinguished European heads you have been shown during the course. Look at this mass; remark this concordance of intellectual faculties and sentiments. Look here again at one of the most beautiful examples it is possible to offer you; we might, indeed, show models in abundance, for our nation belongs to the Caucassian race, and all our heads are more or less formed on the same model.

New Hollander.—Here is the type of another race, the inhabitants of New Holland and New Zealand. The New Hollander presents a frightful depression of the anterior part of the head. Compare this race with the Caucassian, and you will see the immense difference which exists in the anterior, middle, and posterior portions of the head. The New Holland race has been left far behind in the march of civilization; they have so little intelligence as to be unable to discover the means of constructing even a cabin for their shelter; they possess no notion of agriculture; they neither bring up nor utilize domestic animals; their language is excessively limited; in a word, they are brutes, and God only knows how long they have been so. Here is a specimen of their heads, it approximates, as you see, that of an idiot. Let people, then, come and say, "Phrenology is an useless science; the brain acts *en masse*; its functions do not depend on certain portions of the nervous organ." We, on the contrary, say to the psychologists, the metaphysicians of all classes, whether political or religious, "Look at the New Hollander, who inhabits a great part of the fifth portion of the globe; he will never become civilized, because he wants the cerebral organs necessary for becoming so."

New Zealander.—Look at the New Zealander; his head resembles more nearly our own; it contains organs of intelligence, and a few of the more elevated sentiments: their progress, however, has been less rapid than ours, because they were deprived of communication with neighbouring people,—an ingredient necessary, as we shall presently show, to progress in civilization. When the country of the New Zealanders was first discovered, agriculture existed in a certain degree; their language was much richer in words than that of their neighbours. Look here how much better their intellectual organs are developed; they will always, however, remain behind us, because their superior sentiments and intelligence are somewhat inferior to the organization of

the Caucassian race. Look, on the other side, at the negroes, who present several species; you see how the anterior part of the forehead is depressed in that race, though it varies according to certain localities. The noble and affectionate sentiments are highly developed in all varieties; but intelligence, and, particularly reflection, are often feeble. Hence this people has never made any grand progress towards civilization; however, as certain tribes seem endowed with a sufficiently happy organization, and the faculty of language is well developed in the whole race, it may advance by contact with more civilized nations; for mutual relation multiplies objects, and language, becoming richer as each new object presents itself, furnishes in proportion more materials for the intelligence, and more stimuli for the feelings. Remark also, that the dark-coloured tribes who make most progress in civilization are those who are placed under the dominion of Europeans, with whom they intermix blood; the mulattoes, derived from this intercourse, have now become numerous, and are altogether on a level with ourselves. However frequent their communication with the nations of Europe, the pure negro race makes little progress in civilization, though on this point some tribes differ from others.

Negroes.—The negro, whose skull I now show you, was a native of High Guinea, the most degraded of all the African tribes. Here is another example of a similar kind; however, as a counter-balancing weight, we have the head of EUSTACE, a true negro, but a man of the most elevated sentiments; hence he became distinguished above his whole race, a kind of moral anomaly. It is unfortunate that we are unable to tell from what caste his parents were derived; the man himself was born a slave in the island of St. Domingo.

Hottentots.—Look here, at one of the Hottentot tribe; the instincts dominate the feelings and intellectual faculties, and their progress has been very insignificant. This is the head of a female of the Hottentot tribe; "the Venus," who died at Paris several years ago; you may observe a remarkable prominence of the organ of the love of children, which is well developed in all negroes, but the intelligence, and reflection in particular, are extremely feeble.

Caribeans.—Here is the head of a Carib. The Caribs have a fashion of depressing their children's foreheads in infancy, by artificial means. The development of the reflective organs is thus necessarily arrested, and nutrition directed towards the lateral and posterior regions of the brain; individuals of this tribe present large developments of the organs of friendship, self-esteem, love of children, &c., but no superior feelings, no reflection.

The Chinese.—See here, the Chinese head. This nation is, perhaps, the best organized that we are acquainted with. The superior sentiments are highly developed, though their religion and language oppose great obstacles to their proper exercise. Remark, however, that the organs of these idle parts, as we may call them, do not present any notable depression,—a certain proof of the distinctness of the human races, and that some are made to march rapidly in a moral and intellectual civilization, while the organization of others condemns them to an intermediate state between the perfect man and the ourang-outang. The Chinese are known to be cunning, deceitful, thievish; and you may perceive that the organs of circumspection and acquisitiveness are well developed. These seem to be the dominant organs of the Chinese nation, giving them their characteristic tendency to isolate themselves from the rest of the world, whom they consider as so many thieves, or persons to be avoided. Their intellectual organs are large. The nation produces philosophers, theologians, and some profound thinkers; but their knowledge of the natural world, which alone can correct the notions of man, is imperfect; and whenever the Chinese intelligence quits the arts in which it excels, its operations are confined to the innumerable signs of a language too long for the life of man to comprehend, and thus produces nothing but ontological chimeras. Should the day arrive when the Chinese nation, having reformed its language and thrown aside its prejudice, shall throw open its cities to free communication with the rest of mankind, and send its children to be educated in our capitals, and initiated in our acquirements, the progress of the nation will undoubtedly be rapid and immense.

M. SARLANDIERE, who has measured various Chinese heads, finds that if you draw a line from one auditory foramen to the other, over the summit of the head, the anterior portion is found more developed in them than in any other nation; yet their progress in the acquisition of knowledge is comparatively limited. Estimate from this, Gentlemen, the influence of methods, of education; and join, if you can, the side of men like the antiphrenologists, to bewilder yourselves in metaphysics and theology.

The Calmucs.—Here is the head of a Calmuc, a tribe inhabiting the northern part of Russia; compare it with a Chinese skull, and observe the depression of the intellectual organs and sentiments. Many of these people are found amongst the Cossacks, and the latter, unfortunately, we have been compelled to observe and appreciate too closely—a species of brutes who consider nothing beyond their personal interests, and whose interests are identified with their instinctive wants. We saw how they were governed by the knout, and brought to reason by pistol-shots; perhaps it would be useless to

ddress oneself to the higher sentiments, of which they possess such feeble traces.

Africans.—Africa, which now interests us peculiarly, through our colony of Algiers, is inhabited by a race of men, the Arabs, who esemble our own organization in a certain degree; some of the Arabs are *nomades*, the rest possess fixed habitations; they possess intellectual faculties, but do not cultivate them. Here is one of their heads, in which the intellectual organs were evidently dominated by sentiments of egoism, self-love, love of approbation, friendship, love of women and children, and cunning. Hence this nation has made little progress in civilization, notwithstanding the development of their intellectual faculties; they have ever remained cruel, perfidious, and deceitful. Let us avoid, however, pronouncing them stationary, or incapable of advancing. The Arabs have not yet taken a rank amongst nations, properly so called; they want cities, and a well-established connection with some civilized people. Experience and time will demonstrate the effects which examples of industry, and the sciences and arts, may produce on them. Many of the heads brought from their country present very fine examples of perfect organization.

Here are the Moors, another African people. They are highly organized, and history testifies the immense progress the sciences once made under the direction of the Moors. Their march was impeded by the religion of MAHOMET; but they were essentially given to observations; they loved literary employment; respected the sciences and monuments of more remote ages; and became depositories of the relics left by the earliest civilization of our globe. Without the zeal exhibited by the Moors, these precious remains would have perished under the barbarisms of the middle ages, when the northern hordes spread devastation over the face of the earth. The Moorish nation is a noble one; but, unhappily, under the dominion of fanaticism, even more now than formerly. The Turk is more than ever bound up in his Koran. The pacha of Egypt is an exception almost amounting to a prodigy; he shows what influence a single head may exercise over mankind, and how culpable the tyrant is who opposes the march of the human mind instead of encouraging it.

Pacific Ocean Savages.—Here is a head taken from an inhabitant of an isle in the Great Pacific Ocean, where the progress of civilization is excessively slow. The organ of language scarcely exists; there is no constructiveness. Compare it with the Arab head which I showed you a while ago, in which cunning and all the lateral portion of the brain are highly developed. This tribe has been described as very perfidious, and constantly employed in fabricating false money. The inhabitants of the north of Africa have always borne the same character in history. The Roman phrase, "Fides Punica," was always applied to perfidious and cunning individuals. This notion is little calculated to inspire confidence; and our countrymen have had abundant means of estimating their character since the conquest of Algiers. Now, let us take, as a comparison with it, a head from the Caucassian race,—from the priests of ancient Thebes. See here how the development of the anterior part of the head corresponds with that of the more noble sentiments! This is an extremely remarkable fact; and if you take the trouble of observing the heads together, you cannot fail of being struck with the great difference which exists between them; indeed, a comparison with the heads of our own criminals is sufficient. When the morals and habits of a whole nation coincide with their cerebral organization, the most incredulous must give way. You know how ancient Thebes was one of the oldest cradles of civilization; that nation, with many others, has disappeared from the face of the globe, but the Caucassian race still lives and flourishes. Here is the head of a chief from one of the ocean-isles I mentioned a while ago. The inhabitants of those islands, though scattered through different points of the vast Pacific ocean, are much further advanced than the natives of New Holland. The forehead, however, is depressed in a certain degree. Look at the face how it is tattooed; this is a result of their desire to please, and, in general, the organ of vanity is highly developed in these tribes. Look at this skull from New Holland, in which you may observe a similar organization. The posterior part dominates; the head, in short, is intermediate between that of man and monkey.

Asiatic Indians.—See here the Asiatic Indians, a nation enjoying a certain degree of cerebral development. They possess the higher sentiments and intelligence; the portion of the skull corresponding with destruction is quite flat. Hence they live principally on vegetable diet, and seldom take away life; while the Calmucs, and several other tribes, present a well-marked development of that organ. It is now fifty years since the phrenologists commenced assembling together the skulls of various nations; and, on comparing them together, they find abundant confirmation of the observations which they had made on private individuals. You may judge, from what I have had the honour of laying before you, that their labours have not been fruitless. You will also understand why civilization has made considerable progress in no other race than the Caucassian, because the latter alone possesses a perfect development of the cerebral organs.

Progress of Nations in Civilization.

But I pray you to engrave the following truths on your memories:—The best organized nations were originally as low and as ignorant as the rest, until their intellectual organs found food for exercise, and, above all, leisure; for while man is compelled to satisfy his primary wants by laborious and constant muscular efforts, his intelligence can make little or no progress. Aristotle made the remark many centuries ago; and the fact is still demonstrated by the ignorance and superstition of our peasantry, whenever they live removed from large or populous cities. The heads of the Catholic church acted on the same principle when they condemned certain religious orders to the practice of severe duties and penalties, which occupied all their leisure time. Under pretext of preventing idleness and temptation, they perpetuated ignorance, and thus obtained the most blind submission to their commands. Happily for knowledge all the monks were not treated with the same degree of severity; some of the popes and founders of religious orders were given to philosophy. Thus we find certain orders, in the middle ages, imitating the Arabs in their love for the sciences and literature; for if idleness produces unfavourable results in the weak-minded man, dominated by his animal instincts, it presents, on the contrary, to a man of strong intelligence, means of benefiting himself and the rest of mankind. The Jesuits know how to distinguish their pupils into two classes; but they no longer permit them to exercise their intellectual faculties for the benefit of the sciences and general knowledge. The danger of this became too evident by experience.

The foregoing reflections are intended to impress on your minds the importance of all questions connected with the march of human civilization. We shall now take up the subject which we had left, and endeavour to throw some further light on the different progress of various nations in the acquisition of knowledge, by a comparative examination of their heads.

Man, as we said before, experiences the want of social organization; but that organization is accomplished with difficulty, or not at all, whenever the intellectual faculties are too feeble to turn circumstances to the best advantage; to bring the instincts into action; to employ the feelings, especially in the interests of industry and good habits. When this is the case, or when the soil is barren, composed of rocky isles or extensive deserts, then the inhabitants remain rude and isolated, without laws or religious observances; their religion is confined to some superstitious rites connected with the apotheosis of some ancient chief, or to some peculiar creed which their conquerors may have imposed, as Mahomedanism was forced on the wandering tribes of Africa; or sometimes to human sacrifices, like those imposed by the ancient Druids. They neglect the arts, and never collect together in large cities. The isolated situation of the cultivated spots which they inhabit, the want of navigable rivers, the absence of commercial relations with other nations, sometimes resulting from religious hatred,—all these contribute to prolong their state o semi-barbarous civilization.

Hence you may deduce the necessity of three elements for the perfection of civilization at an early stage, viz., intelligence, fertility of soil, and communication with other nations, for the soil furnishes the intelligence with its means of action, and example must multiply them. These three conditions are indispensable for a great multiplication of the means which advance civilization. We are now transported to a civilized life on the path of progress, for facility of producing substances generates leisure, and leisure allows the intellectual faculties to meditate and observe. The passions, however, always exist, hence the frequent conflicts between individuals, or chiefs, whose authority is on the wane; hence every one endeavours to attain the veneration and esteem which nominated and maintained the chief. To terminate the confusion their chiefs have recourse to the organ of veneration, they invoke the assistance of their divinities, and menace the rebellious multitude with their anger.

But you may ask me, "How do they obtain the idea of a Divinity? What is the origin of polytheism?" I answer,—"Observation and comparison, aided by causality;" but by an ill-directed causality, such as we may suppose it to exist in ages of barbarism and ignorance, when the sun was converted into an Apollo, and the air designated as the throne of a Jupiter, modelled after their own chiefs. In the same way the sea was governed by a Neptune, each river subject to some subaltern god; the fields had their Sylvan powers, the trees their Dryads, the vine its Bacchus; but the latter was also a conquerer, and hence, probably, a personification of some ancient chief from whom they learned the elements of agriculture.

Some authors pretend to explain polytheism by allegories derived from the motions of the stars and the succession of the seasons; but I do not believe that our early fathers possessed that profound sagacity to imagine that the chiefs, magi, and priests, placed no faith whatever in the existence of the divinities whom they held up as objects of adoration and terror to the multitude, as to give them a much greater degree of knowledge in astronomy, and natural philosophy, than they could have possessed. It is easy to measure their acquirements by the systems of the earliest Greek philosopers, who

drew all their knowledge from them. Besides, whether we admit that ancient sages explained the creation and conservation of the world by a vague, confused theory of fire and water, by the four elements, by spirit, or by some superior power; whether the people worshipped gods in greater or less number, the phrenological doctrine remains unchanged: we find all this produced by observation, which ease and leisure gave them an opportunity of exercising, by furnishing materials for causality to work on; we discover benevolence beginning to act in junction with marvellousness, to excite hope and fear, fear especially, for the latter was a necessary instrument for their chiefs; at a much later period the priests began changing man into a species of divinity, to procure him eternal pleasures; at first they granted this honour to none but princes, but as every idea once thrown out must march, the multitude was soon admitted to a participation.

We have yet mentioned only those conflicts which arose between individuals and the chiefs whose power they endeavoured to usurp, but the conflicts have extended to whole nations, and wars sprung up; we do not now speak of war as it existed at the earliest periods of civilization, but of the wars of the second period, that is, when men had collected together and formed considerable nations. When this occurred, the chiefs invoked the assistance of their gods, not against rebellious subjects, but against hostile nations; the people were roused by this idea, miraculous interference was shown, the augurs came forward and spoke with the voice of the gods; the united inspirations of the chiefs and priests governed the multitude, the vanquished became the slaves of the victor.

In a lower grade of civilization the conquered enemy is slain that he may be more easily despoiled, or even devoured, if the cerebral organization of his conqueror tends to this excess of barbarism, (Caribs, New Hollanders, and a few American tribes), or according to their degree of ignorance and distribution, &c.; they never, however, preserve vanquished enemies, because their numbers might incommode them, because they possess none of the higher feelings which inspire humanity in the degree of civilization produced by large cities, constant exercise of the intelligence by the development of veneration, benevolence, justice, &c. We no longer find the custom of massacreing the vanquished who yield themselves prisoners; the eaters of human flesh no longer exist; the life of the conquered individual is spared; he is converted into a slave, and made the subject of property; he is thus placed beyond the reach of common law; the vanquished slave has no claim upon justice. The sentiment of justice, innate in man, like all the rest, commences, however, to make itself felt, but it is originally applied only to the citizens of a state: knowledge is not yet sufficiently advanced to apply it to other people; the ignorance of nature and her laws; the moderate development of the more noble sentiments prevent men, at this period of civilization, from respecting misfortune wherever it may present itself from; in a word, considering all mankind as brothers.

Justice, then, exists only for the conquerer, it is he, his priest, or his "God," who profits by this noble sentiment which is shut against the vanquished. The motto "*Væ victis*" still exists; barbarism still reigns, modified, it is true, but not less vigorous.

But, finally, as war diminishes, and the population of a state becomes multiplied, a number of individuals, who were before fully occupied, have leisure to cultivate their intellect, and the general prosperity advances; for the sentiment of acquisitiveness, at first weak, has now become powerful, and is applied to the cultivation of land as well as to the acquisition of booty. The intellectual faculties are thus cultivated, as we have said, and that by observation.

But you may ask, "What is this observation which influences so remarkably the state of our intelligence?" Gentlemen, it is the observation of nature. ARISTOTLE, or THEOPHRASTUS, or some other philosopher, arrives in the world; nature becomes the subject of his observation; he makes a thousand comparisons on man, and on the animal kingdom generally; points of analogy are discovered by him between inanimate and living bodies, and the grand laws which govern the universe are laid open to us. It is the intelligence working on observation that made these sublime conquests. The instincts now gradually change their direction, the arts join their civilizing influence, the progress of natural knowledge annihilates the illusion of fictitious gods; these divinities, and their superstitions, are left to the most ignorant and lowest class of the people; they are despised by the wise and powerful. Religion, I mean the religion of idols and false gods, sinks into total discredit. By what power is it succeeded? By that of the more elevated sentiments and interests. The chiefs of the nation now serve these powers alone, and leave the gods, by which themselves were formerly governed, to the blind adoration of the multitude.

As this progresses, war becomes less barbarous, and terminates in alliances between neighbouring nations. Commerce, travelling, the faculty of traversing the vast ocean, produce increased communication and fusion between states. Acquirements multiply in proportion; for the wealth and number of inhabitants have increased to such a degree, that war no longer employs every citizen in the state. Besides, schools and universities

are founded, and send forth a multitude of observers and thinkers. National egotism now subsides; a law of nations is erected on the ruins of barbarity; the sentiment of justice embraces all mankind, though in an imperfect manner; and the law becomes respected as the will of the majority, or expressing the wants of social order. The word "law," an abstract symbol of a fact which is easily comprehended by the people, is looked on with respect; and, immediately, civilization undergoes an important change. The progress of nations would now be immense; but, unhappily, it is impeded by the influence of certain sentiments. Men of learning, but more selfish than benevolent—more addicted to servile actions than to generous feelings—utilize the sentiment of veneration for the benefit of tyranny; for power must always present itself to us in a consecrated shape: left to itself, it is an infant. As nations become great, power, physically speaking, dwindles into insignificance. The veneration formerly bestowed on superior qualities, no longer sustains it; because, when we compare a chief with many of his subjects, the balance is too often found against "the LORD's anointed." Ordinary veneration, then, being insufficient, a higher degree is sought for. The religious sentiment, enfeebled, as we have shown, by the progress of natural knowledge, is revived under the fostering hand of kings and priests, and acquires a fresh degree of activity. It is changed, however, and has taken a new complexion, which is dexterously applied under the direction of our increased knowledge in natural philosophy. Rural divinities, the gods of the rivers and the sea, now disapppear; but observation discovers a first cause, and a single supreme power is proclaimed. The priests now place themselves in paradise, beside the kings and heros, to whom celestial joys were accorded by the ancients. Such are the germs of the true religion; but perfection, in so high a degree, is only to be found in the perfectly-organized races. Religion, then, has marched a pace with the rest of knowledge.

The faculty of causality, which discovered the existence of a single supreme power by strict induction, (see LANCET, p. 921.), does not arrest its action at that point. Realising the abstract ideas, of which we have already spoken, it creates spiritual substances; legions of powers intermediate between man and GOD, or, to speak more correctly, the beings created in the earliest periods of civilization, are perfected, and GOD is surrounded with a court modelled on that of the most sumptuous and splendid earthly potentate. Man, after his death, is now deified in a more bold and hardy manner than at any other period; the enemies of priestly rule are tortured in the most ingenious and ferocious manner during the same eternity, whose blessings are showered on the friends of priestcraft. All the abstract terms representing the superior qualities of man,—virtue, courage, generosity, holiness, &c., are personified and spiritualized; for now the people have taken their places in the skies, beside kings and priests.

Thus theology becomes constituted; but the personifying action of false causality has not reached its maximum. Having transformed the sum of our intellectual faculties into substance, under the name of spirit, the same action is applied to each of our faculties, to each of their acts, and the domain of metaphysics is peopled with a number of sacred and profane beings, to whom the multitude renders homage with unaccountable eagerness.

But this is not all; veneration embraces, not only the beings intermediate between GOD and man, but also the superior faculties of the latter; while his inferior faculties become an object of hatred and execration. Here you may exclaim—"The progress has been a noble one; a few vices, a few faults may exist; but time and reason will remove them." Without doubt the progress is splendid; and such results are never witnessed in nations where the forehead is depressed. But let me tell you what must come to pass before reason can effect the ameliorations you demand. The superior sentiments are deified. This is well enough; but the instincts and inferior sentiments, though now despised, are not, and cannot be, effaced, because they exist in the organization of man. What then will the metaphysicians do? Pretending all the while to condemn the instincts in general, especially when applied to profane purposes, they will approve and stimulate them on every question connected with sacred interests. Murder, pillage, confiscation, infidelity, treason, perfidy, the total destruction of families and nations, will be sanctified under this motive; let the object of these crimes be to further "the glory of GOD, and the good of his servants," and you will find the wretches whom they have sullied canonized among the saints, instead of devoured by eternal fire. Thus, warriors who perish in support of divine authority are elevated to the rank of saints, and the same honour is conferred on the martyr to the sacred priesthood; the servants of these two powers become divinities; judges are constituted for civil affairs; and the latter will feel no other influence than that of their metaphysical sentiments; they will condemn all who commit crime for a worldly purpose, and acquit the perpetrators of every villanous deed which turns to the profit of the powerful monarch or his high priest; and the world will exhibit the strange and revolting principle of the same crimes being simultaneously condemned and sanctified, (during civil or religious discords), by princes and priests

waging a war of extermination against princes and priests of an opposite faith. Torture will exact the avowal of crime sometimes from the mouth of the innocent. The inquisition starts up; the words "profanation," "anathema," are heard on all sides, and testify a feeling of revenge which proposes measuring the punishment inflicted according to the elevation of the civil or religious power whom the culprit may have offended. The most atrocious tortures are found insufficient to avenge offences given to the majesty of God, or the king, or the sanctity of the sovereign pontiff. Lacerations of the human body, dislocation of the living joints, the stake and its slow-consuming flame, are the highest pleasures of these men, who announce themselves the interpreters and representatives of God upon earth.

Why does all this take place? Because man is yet insufficiently illuminated by science; because his knowledge of nature is still imperfect; because the comparisons of all living beings together have not been sufficiently multiplied; for these comparisons teach man, that the sentiments of justice, commisseration, and benevolence, should embrace the whole range of the human species, and not be confined to the narrow circle of those who worship our own God, or profess the political creed that we do.

But this is not all. Remark, that as the lower sentiments and instincts continue to predominate, notwithstanding the development of metaphysical doctrines, the men, who turn to their own profit the personifications alluded to, are incapable of renouncing a single worldly enjoyment; hence open robbery is replaced by confiscations, and appropriation of property, on the pretext of profanation; the vanquished enemy is no longer the subject of ransom, but a fresh tribute follows every victory; the impious, execrable, anathematised miscreant, who dared profane the Divinity, or any of his interpreters and adherents, is robbed of all means of existence, while the members of this metaphysical hierarchy procure all the delicacies and enjoyments of life at the expense of the unfortunates who may differ from them in opinion. The history of the days gone by prove this; it is unnecessary for me to enter into details. Thus you see that metaphysical doctrines have been totally incapable of remedying the evils which result from the excess of our passions; on the contrary, those theories have reconciled themselves with the basest and most despicable of the human instincts, and have found means of consummating a monstrous alliance between vice and virtue, that is, between the more noble sentiments and the instincts of the vilest egoism. In this world, peopled by fanatics, every one has despoiled, or partaken of spoil; every one has insulted his neighbour differing from him in opinion or religious belief. Such was the reign of metaphysics; and by "metaphysicians" I understand not only the philosophical organs of power, but also the religious sects whose doctrines were blended with those of the sovereign powers at that disasterous period. I comprehend all these under the term metaphysicians, because what I have described is the consecration of words, or symbols, transformed into real substances, which are then regarded as so many powers, and whose effects on social order are perpetuated by the passions and interests of the ignorant men who created these chimerical realisations.

Do you think that affairs can continue in this state? Yes, certainly, if knowledge remain stationary. We have a convincing proof of it in the blind fanaticism of certain nations, whose intellectual faculties are feeble, or in whom the action of these faculties is impeded by complete separation from more civilised people. But the melancholy picture just drawn must change as soon as well-organized nations enter into mutual communication, and wealth permits the cultivation of the sciences. Observation, still our only resource, furnished a remedy for the evils we have described. The intellectual faculties never cease to act so long as they have materials to act on; the inferior organs assemble facts, the superior ones meditate on them. Light breaks gradually on the oppressed and ignorant multitude, and furnishes powerful engines of reaction. At length, as knowledge marches, metaphysics are opposed by the natural sciences, which suddenly discover the industrious arts, after having progressed for a long time unobserved and in silence; the charlatanism of metaphysical language is now fully exposed. The illusion under which the human mind laboured disappears; industry enriches the laborious artist, and the veneration of the multitude is now divided between the new candidates for honour and the priests and princes, who formerly engrossed it to themselves. On one side the light of science, on the other the influence of wealth, is brought into action, and both unite their efforts against the power which trampled on them. A mighty barrier is erected against the progress of this metaphysical doctrine, whose device is ignorance, whose seal is the pummel of the sword; if the arts and sciences march slowly, their progress is sure. Thus, Gentlemen, the intellectual faculties are the agents of this resistance.

A certain time elapses, and a partition of power and influence takes place. I omit describing their gradations, which your knowledge of history must readily supply. The world then divides, as at the present day, into two grand classes; in the first we find men who live on the memory of the past, who are attached to the personification of abstracts, and apply their theory to religion

and to politics. These men shut their minds against every species of knowledge except that calculated to extend their enjoyments and prolong their pleasures; hence we find them protecting the arts, while they reject the sciences. These men are naturally stationary, because, on the one hand, they hope to continue in the enjoyment and possession of those privileges with which ignorance clothed them during the reign of metaphysics; and, on the other, because their minds are too selfish, too mean, to renounce them of their own accord. You may have observed this at the period of our late revolution, when the men of privileges separated into two classes; one followed its caste, and declared itself eternally bound by the ties of order; the other class generously separated itself from its ancient friends, and laid down its privileges. Look at the number of the latter, and confess that humanity is still the wretched slave of passions and interests.

The other grand class is composed of men of progress, of men who live under the direction of the observance of nature, of men who cultivate the sciences and industrious arts,—the only sources of legitimate wealth. Happily for us of the present day, industry is the most effectual remedy against metaphysics. On the one hand, she turns away the mind from vain speculations on metaphysical signs to fix it on real, productive occupations; and, on the other hand, she elevates the wealthy artist of his own fortune above the ignorant and useless receptacle of hereditary honours, who knows no other science than that of spending the riches transmitted from his ancestors, while all around him is in progress

At length a time in the history of civilization arrives, when the noble and wealthy are compelled to cultivate the sciences and arts, that the multitude may not completely throw them into the shade. A spirit of emulation is awakened on all sides. However, notwithstanding the remarkable tendency to improvement, society is still encumbered with metaphysicians.

You see, Gentlemen, that I arrive gradually at our own period. Here the question becomes more delicate. While the metaphysical doctrine confines its admiration to the superior faculties of the human mind, which alone can make man happy, it deserves our respect. Thus the terms "virtue," "honour," "justice," "benevolence," will always be pronounced with feelings of respect. Besides this, men require to be governed, and, consequently, the word law, which comprehends the will of the best-instructed men in the nation, must become an object of veneration. It follows as a consequence, that the men entrusted with the execution of the law should be looked up to with respect, and our sentiment of veneration is thus applied to these men, as well as to our masters and parents. We equally owe veneration to every species of knowledge, to every service rendered to society, to the practice of virtue, to the aged and the unfortunate. Such is metaphysics, taken in the best point of view. It is easily appreciated. Man seizes immediately the meaning of words which recall to his mind honourable recollections, and readily venerates those who labour in the cause of humanity, by supplying the wants of their fellow-creatures, communicating knowledge, or assuring to each the tranquil enjoyment of his rights, by an impartial execution of the law.

The men of progress, enriched by economy and industry, enlightened by scientific acquirements, now demand an account from their governors. Hence the origin of representative government. Once established, this form of government is an immense progress. Its utility being once recognised, the representants of the nation, the chief of the executive power and his substitutes, who protect the people in peace or war, become naturally objects of veneration. But all this is palpable. Every one readily forms an idea of the persons and things designated by the terms "king, deputy, law, justice," &c. These words are easily associated with the terms "virtue, obligation, duty, obedience, fidelity, devotion," &c. This does not constitute metaphysics, properly so called, though it contains a great number of abstract ideas, because the latter are of a nature to be explained by our perceptions, sentiments, and reflective faculties.

Shall I speak of religions? Here the question becomes still more delicate. We must, however, grapple with it, for religion exercises the most powerful metaphysical influence on society. Religions may be divided into two great classes; the first is merely a continuation of former superstitions; it personifies God, and clothes him with all human faculties, and, by implication, with all human organs. The servants of these religious creeds have seen the Divinity, have heard his voice; they still hear and see him; they describe him as intervening capriciously in the order of the natural world, without knowing (for they publicly confess their ignorance) if that be possible for a single instant; they give him the tastes and inclinations of man, the pomp and luxury of princes; they are intolerant and exclusive in their belief; their doctrines embrace absurdities of the grossest nature, and hence, while they accept the arts, they are compelled to reject all the sciences. Modern religion endeavours to avoid this absurdity, and ceases to personify the Supreme Being. Its professors adore him without pomp, ostentation, or outward show, and content themselves with assembling together for the purpose of testifying the gratitude and veneration inspired by the sublimity of his works, and the boundless extent of his goodness.

Such are religions in general. We have

avoided entering on details which would be foreign to our subject. Some modern governments guarantee, it is said, full and equal protection to every form of religious worship. This, at least, is their duty; for the desire of venerating being inherent in our nature, no man has the right of preventing his fellow-man from applying this sentiment to the notion of GOD. This pretended equality of protection, however, does not really exist. The forms of religion which personify GOD are more warmly protected than any other,—we might affirm, are the only forms which receive support from the powers that be. The people are considered too ignorant, too little advanced in the practice of intelligence, to conceive a GOD without mouth, eyes, arms, or legs, a divinity without viscera, or parts of generation. Men of sense content themselves with abstracting the organs of vision, of apprehension, of generation, &c., though they persist in clothing him with the faculties essentially connected with those organs; in other words, they admit themselves guilty of falsehood und deception, though if a stranger happen to make this remark, he is punished as one who has outraged public morality. The honest descendent of humble parents is considered capable of every crime if he avows himself uninfluenced by the fear of eternal torments, yet the immense majority of those who proclaim this unchristian doctrine reject the idea of a corporeal divinity, feel no necessity for any form of worship, and practice no form, for the sentiment of veneration is weak in a great number of individuals. This is a truth beyond contradiction, and we declare it without fear, as we declare that falsehood and deception are unnecessary for the support of social order. We do not conclude that religious impostors should be objects of persecution on the part of the government; we simply express the wish that an equal degree of protection should be extended to every form of religious worship, and that governments may not continue their exclusive support to the tyrannical pretensions of those sects whose doctrine is based on a fiction, and who pretend that man is incapable of honouring his Maker, unless the latter be presented to him under a mask of contradictions, absurdities, and lies. The present state of religious worship demands a necessary reform, and this reform is inevitable. Liberty, confined within the bounds of the law, will effect this progress in the lapse of time, for it is an act of tyranny to protect only the established forms of worship. Every liberal government should leave the people free to select their own form of creed or worship, and should permit religious associations to multiply themselves, on the condition of each undertaking the expense necessary for its support, for religions have a constant tendency to divide into various parties, and uniformity of rites can only be obtained by the exercise of violence and injustice. This general liberty, in matters of religion, is the only means we possess of preventing the priests from influencing the governing powers of a state,—an important point, Gentlemen, for priestly influence is naturally and essentially an exciting cause of disturbance. Such is our opinion, and they misrepresent us who pretend that we would wrest from the people their legitimate objects of veneration, their temples and images, their pastors, and, above all, their holidays and Sunday, so often looked forward to with delight as a day of pleasure and repose.

When speaking of the notion of GOD, I mentioned how certain modern metaphysicians aspired to the possession of a religion much more refined than that commonly prevailing in Europe. Commencing with the sentiment of personality as their foundation, they ascend to the notion of a supreme being, whom they regard as communicating directly with the conscience of man, while he is totally distinct from any of his creatures. In this way they separate GOD from earthly and material attributes, and consider him to be as little under the domain of the senses as conscience itself. This, undoubtedly, is a progress in religious reform which places them far above the followers of JESUS CHRIST, notwithstanding the improvements which some of the latter have effected in papal catholicity. The fact is, that it is ridiculous to believe that GOD reveals himself to us as a common induction from the natural world is revealed. When I see the shadow of a body which is concealed, I deduce the existence of the body itself, though I do not see it, because the previous experience of my senses had demonstrated the connection of cause and effect between the body and its shadow; but I never saw GOD, but acquire the notion of his existence on observing the order which reigns in the natural world. The existence of a superior being, then, is proved by the faculty of causality, as we have already seen; and men in whom this faculty is feeble may be incapable of feeling this conviction, or may even deny the existence of GOD altogether, under the pretence of his not being revealed by any of their senses. To sum up what we have said, the God of modern psychologists necessarily is divested of all sensitive attributes, though they clothe him with attributes of force and power, which are purely of inductive origin. But what species of religious worship can the modern psychologists pretend to erect on their definition of the Divinity, which excludes every allusion to ideas derived from the senses? Perhaps a sentimental sect, similar to that of the pure deists. However, they have not sufficient courage to avow this; and while they blame the forms adopted by other Christians, they find nothing to substitute in their stead. This throws them into a consider-

able degree of embarrassment; they lose power, they would govern, and the fear of failure in their projects prevents them from interfering with the Christian religion, and thus producing a reaction, whose consequences they justly dread. Hence they are compelled to join, in a certain degree, the servants of this religion,—a union which requires prodigious philological efforts to reconcile their subtile spiritualism with the more gross materialism of the orthodox catholics, which, though always denied, is always reproduced in that sect.

Phrenology then intervenes,—a science which must necessarily be opposed by every form of religious belief which models God after the attributes of the material world; and this opposition comprehends not only what is religious, but the whole question of human morality, since the followers of all religious sects realize the different cerebral faculties, and instead of regarding them as phenomena of nervous action, consider them as qualities of a spiritual substance, which governs the moral man after its own fashion. Thus they are incapable of making any application of the various forms of the brain to the capacity and education of man in society.

Phrenology also finds opponents in the pure psychologists; for the latter, without positively declaring that the faculties of man are endowed with the attributes of the senses, clothe them with these attributes in their metaphorical language, though they affirm all the while that they are substances or forces totally distinct from material things; besides, they reduce the mental faculties in an arbitrary manner, either to the personal sentiment ("I") or to consciousness, and subdivide these latter again in a still more arbitrary way, assuring us that they are spiritual because they do not fall under our senses, and refusing to regard them as functions of the nervous system. This theory, when reduced to language, becomes so obscure and contradictory that no one can understand it, while its professors seem incapable of understanding one another; and hence many persons can discover no bond of union between the psychologists, except the project of depreciating every social doctrine, that they themselves may seize on the government of affairs, reserving the right of making such concessions as time and circumstances may demand, without having the air of abandoning their principles, which they always take care to keep in the back-ground. We think, in fact, that they have no philosophical principle, and that the title of "Eclectics" which they assume is only a cloak to cover their scepticism and want of conviction on every subject. The considerations we have just offered incline us to think that their principal motive is ambition, which employs so many of the faculties, and caution in particular, to attain its end. Hence, instead of calling them "doctrinaires," we might more justly term them "adoctrinaires." We must, however, acknowledge that they are the least subject, amongst the inhabitants of our own country, to prejudice. We have seen them attack the fanaticism of catholicity with the same force as they displayed against the sensualism of the 18th century. Their success has been great; and, if it continues, must end in the destruction of both these theories. But what will be the result of this progress of scepticism? No one can foretell. Who can foresee the measure and duration of its influence? Too many doctrines, and ambitious projects without any doctrine, are now drawn up against one another to permit our giving any decisive judgment.

All the parties now mentioned resemble one another in the circumstance of employing more or less logical reasoning in support of their doctrines, without paying any attention to the facts lately discovered in the physiology of the brain. They obstinately persist in drawing their arguments from antiquated notions on the functions of this organ, and reject the ideas taught by GALL and his followers, on the stale pretext of absurdity, materialism, atheism, fatalism, or impossibility of applying them,—pretexts which dispense them from the trouble of examining the general facts that we offer.

This, Gentlemen, is a fundamental point, to which I entreat your closest attention. A skilful logician seldom employs more than a few words in refutation of your major proposition; he carefully avoids fixing the attention of his auditors on the fact or doctrine which he wishes to disprove. On the contrary, he hastens to lay down another fact; this done, he proceeds to draw his deductions in the most rigorous manner, and enters into a minute examination of such details as he intends should make the greatest impression on his auditory. This was the method adopted by CONDILLAC, and you all know what multitudes of partisans the order and charms of his reasoning obtained in our schools. On the other hand, phrenology finds herself in presence of these men, whose origin you know, for they descend from the first cultivators of the sciences, and the patrons of industry. Yet, who would believe it? These men of progress seem incapable of appreciating the benefits they might derive from phrenology. In the commencement, they tried empiricism, and a simple observation of facts; but this is insufficient, for, however numerous the partizans of pure empiricism may be, they always meet men of superior intellect, and partizans of systems, who tell them, "Your empiricism is useless, so long as it suggests nothing but expedients. We require a doctrine, a principle, for some settled plan is requisite to regulate the conduct of man in private and in social life."

But where will the men of progress, the enemies of antiquated metaphysics, discover

those principles? Some one will answer, in the 18th century. But, let me ask, once for all, what is meant by the 18th century? I have already told you,—It is morality founded on a rational egoism. But the most rational and praiseworthy egoism can never be compared with the superior sentiments in exciting causes of human actions. The 18th century did not admit the influence of the superior sentiments with which it was acquainted; it could never explain why a man devotes himself to certain death. The explanation offered by the egoists cannot stand. They say, it is in the hope of praise and glory; but the latter motives do not always exist, and many noble actions have been performed by men totally uninfluenced by them. When the egoists of the 18th century said, "If I love my friends, it is for my own pleasure and advantage," they asserted what was inexact. How many men have sacrificed themselves for their friends, or for their parents; for their wives, their children, or their country, without the slightest hope or possibility of their being rewarded, certain that their devotion would remain unknown to the world, or even exposing themselves to dishonour. Some, perhaps, were stimulated by the hope of recompense in another world; but we have seen the same sacrifices made by unbelievers and atheists. These men, in such cases, obey the impulses of their more noble sentiments, which are sometimes sufficiently strong to stifle reflection.

Such was the redoubtable barrier raised against the progress of the egoistical doctrine. The religious metaphysicians took advantage of the circumstance, and fell with vigour on their adversaries, and maintained either that the men who performed these sublime actions were influenced by the hope of future reward (a thing which is not always the case), or that virtue was an invisible power, placed by the hand of GOD in the heart of man to guide him in his sacrifices, —an allegation that could only be rectified by a knowledge of the organs which produce this virtue. But the partizans of egoism were incapable of making this answer to their opponents; they were reduced to silence; and the priests, triumphing in their defeat, overwhelmed the sect with sarcasms and abuse,—a line of conduct, by-the-by, neither generous nor charitable, unworthy of men who pretended to be the guardians of that virtue for which they combated. But no adversary can twist the iron in your wound with more perseverance or address than a priestly psychologist.

Ignorant as they were of phrenological truths, what could the progressives, those inheritors of the doctrine of the 18th century, do? They were reduced to the necessity of begging assistance from the modern metaphysicians, whom, however, they should have regarded as adversaries, though their gall is much less bitter than the venom of the priests. Hence they consumed their strength in useless efforts at reconciling the dogmas which they borrowed from the self-styled eclectics, with the remnants of the egoistical theory, which they could not abandon altogether, and gave the psychologists an opportunity of telling them, with an air of pride and superiority, "You have done well in taking refuge under our shield, for you are men of inferior capacities; poor materialists, unrefined philosophers, who, like your own wretched CONDILLAC, recognise nothing but metamorphosed sensations, which can never explain the mind of man. If you adopt one single proposition of our theory, we shall soon compel you to adopt the rest." Hence, for a short time, the youth of our schools seemed to incline towards a piece of bastard asceticism, of which it is now ashamed, for it feels the impossibility of reconciling mysticism with the ever-progressing march of our discoveries in the natural sciences. But its position is difficult, for it cannot fall back on the theory of the 18th century. Hence the almost desperate resolution taken of devoting everything to experimental empiricism, and rejecting every attempt at systemizing facts, every extended view of things, under the really laudable terror of falling into false theories, or, on the other hand, of appearing seduced by spiritualism, whose charms are now faded, though its power is extensive.

Excuse these reflections, Gentlemen. You know how I am accustomed to speak with frankness whatever I think to be true. But to continue. The progressives do not see that their only resource lies in phrenology, and I shall now prove this. To do so, I have only to view the doctrines of phrenology, adding a few conclusions of my own, from the observation of facts. You are now sufficiently acquainted with the science to distinguish whatever points of this *résumé* may be considered as improvements on GALL, SPURZHEIM, &c.; and I trust you will willingly lend your attention while I throw a last glance on this new science, whose materials are still scattered and unarranged, though they have been multiplied to a great extent since the time of GALL.

It results, then, from the doctrine and discoveries of the phrenologists,—

First,—That all complete and evident knowledge of bodies, or their phenomena, is derived from the external world, through the medium of our five senses. In this point we agree with the philosophers of the 18th century.

Secondly,—That every instinct and sentiment is in relation with external objects, and would be confused and insignificant if it were not specialized by our perceptions. I defy any one to prove the contrary, or show me a man, deprived from birth of sight and hearing, who possesses ideas or manifests sentiments. Experience has demonstrated

his. An individual under these circumstances can manifest only a few instincts, and these are very obtuse. He merely seizes the food presented before him. He seeks nothing in the external world, because he has no means of corresponding with it. Hence not only knowledge of things, but the specialization of instincts and feelings, *i. e.*, their application to a particular object, is derived from our perceptions.

Thirdly,—That the notions which do not concern bodies, for example, substance, cause and effect, power, space, duration, &c., are primarily derived from bodies, since we should be deprived of them without a knowledge of bodies; and their number is determined by the number of the attributes of bodies, and of our intellectual faculties.

Fourthly,—That the three facts, just announced, demonstrate the limits of human knowledge, either in a direct or an indirect form; since man can never penetrate beyond the relations established by his organization. I have read, with considerable attention, the works of a sect which pretends to an indefinite degree of perfectibility, and, consequently, considers that the progress of what it calls the human mind has no limits. I candidly acknowledge that I was unable to understand their works; but I discovered that they contained a multitude of abstract ideas realized; *i. e.*, considered as bodies, and engendering, at every moment, other abstracts, not less productive of new ideas of the same kind, without its being possible for me to discover any term or limit to this succession of generations.

The philosopher now discovers two principal means of improving mankind in a moral point of view:—1st. By enlightening the man who possesses already good intellectual faculties, and who has the time and leisure necessary for their cultivation; by proving to him that he has within him principles abundantly sufficient to repress his evil passions and inclinations; by developing such inclinations and sentiments as are calculated to procure the highest possible sum of happiness. 2dly. The second means consists in accustoming the man of weak intelligence, and the multitude, who are deprived of that ease and leisure necessary for intellectual improvement, to bodily work; in instilling into them the habit of good acts; in developing, by precept and example, whatever superior feelings they may possess; and combining all this with instruction in a useful knowledge of natural and social affairs, communicated in a summary and clear manner.

Now, I have shown that phrenology alone can furnish us with the means of attaining this double object more successfully than doctrines which hold forth the terrors of a future state. In fact, the idea of future punishment has little or no influence on persons in whom veneration, ideality, and marvellousness are feeble. These men are incapable of conceiving the existence of a world which is independent of the objects revealed by their senses, as is proved by the manner in which most criminals conduct themselves, for their intellectual life is a chimera; they laugh at its fancied pleasures, and think only of their instincts and sensual appetites. They feel pride in discovering that many can find no better reasons for condemning their criminal conduct than such as are drawn from the torments of hell. Hence, as soon as reflection has demonstrated to them the absurdity of the menaces dealt out by their priests, they become insensible to every species of remorse, and nothing can arrest them in the career of vice. How much better to take phrenology for our guide, and endeavour to reclaim these men, by making them feel their duty towards society at large; by proving to them that vice and virtue reside in our nature, and are not phantoms conjured from another world; that a life of crime is incompatible with the social state; and that they possess feelings which should make them sympathise with their fellow men! If to these words of peace and consolation we could join a guarantee to these wretched men, of sufficient work for their sustenance, and an obligation of performing such work, we certainly should do more for society and morals than is now effected by the menace of death, which is, to them, a termination of suffering; or by the still more futile perspective of eternal suffering in a spiritual world, laughed at by men who can comprehend no other suffering than a corporeal one.

We have made, then, an important progress in proving that virtue and a delicate conscience exist *in our organization*. The moral deductions from this principle become equally applicable to gentlemanlike malefactors, who have sufficient skill, knowledge, and address to commit crimes without exposing themselves to the vengeance of the law, and who look just as lightly on the terrors of hell as does the criminal who is about to lay down his head on the block. Would not society gain extensively, if every one knew the phrenological mass of his evil inclinations, and could prove before the first comer, by his conduct, that his constant effort was to neutralize them by exercising the opposite faculties? Were this the case, the heads of the state would cease to be so frequently deceived by an hypocritical exterior, and relieved from the pain of so often changing their ministers, after trials which are always more or less injurious to the public welfare. Some of you, perhaps, will laugh at the idea, but if ever it be our good fortune to possess a king who is acquainted with phrenology, the dominion of courtiers and hypocrites will be at an end. Society cannot fail to see the day when we can say

to the disbelievers, who are numerous in civilized Europe, and certainly hold the most elevated posts, "You pretend to believe in virtue, but are disbelievers. Your interests and pleasures are the only gods you worship; but, beware; virtue is not an empty word. It is a principle, stamped on your brain, by the side of justice and reason. Listen to the inspirations of those faculties; they command what is just, what is good, what is grand; they inspire veneration, extending from the Supreme Author of our being down to the lowest servant of the law, from our parents and ancestors to the most humble benefactors of mankind. If you violate these sacred laws, the people will cast a scrutinizing glance on your heads, and, if they find your vicious conduct borne out by a vicious organization, you are lost for ever; every one will reproach you with having neglected to cultivate the germs of your virtuous dispositions. You will be declared guilty, and the voice of public opinion will, with one accord, proclaim your condemnation." Believe me, Gentlemen, the time is not far off when the words which I now speak will be familiar in the mouths of men; for their truth may be demonstrated by observation,—by observation which has become the ruling passion of the age we live in, though it remains dumb when we question it on the lots which await the good and bad in another life.

You have not forgotten, I hope, the details which I presented to you on the auxiliaries and opponents of each faculty. My object in this was to enable you to apply phrenology to education, and morality to the improvement of our penitentiary system, and to all the grand principles for ameliorating social order. You are now in a condition to feel how proofs deduced from an actual observation of facts must have a greater influence on the moral conduct of man than the representation of goblins, or devils, armed with tails and torches, with hoofs and horns, since mummery of this kind can only affect men of weak minds and no instruction, and has a constant tendency to disappear in proportion as knowledge and the reasoning faculties advance, while truths derived from observation only become stronger with the progress of science. Besides, the whole of this phantasmagoria of hell and devils has been long ago rejected by all philosophers, and even by a considerable portion of religious believers.

Let us, then, acknowledge this deduction from our phrenological labours, that the observation of man on man is more calculated to improve morality and manners than all the imaginary motives which the fertile minds of the priesthood have invented. Do we not insult man's reason when we tell him, "If your conduct in this life be unchristian-like, you will burn throughout an eternity of misery;"—a mere cover for the phrase "Your nature is perverse, and you cannot lay it aside without my assistance; I promise to give you one essentially virtuous if you obey me." The priest adds, "You do not believe in hell! Oh, you are a dangerous and corrupt being! The fear of temporal justice is the only restraint upon your passions. I should be sorry to trust myself with one to whom assassination and robbery might so soon become familiar."

This is insolence and impertinence of the purest kind:—"Wretched worm, it is my conscience which prevents me from destroying or despoiling you, in spite of the grossness of your insult; and my conscience is here, in me, and not in that ideal world whose entry you would fain barter for gold." Nothing strikes the philosopher more keenly than the care which all Christian priests take to paint the world as one vast receptacle of crime and iniquity, in order that the faithful may come in numbers, and buy at any price the virtues and felicity of their imaginary world; yet some of the parrots who frequent our drawing-rooms still innocently repeat these revolting absurdities, and tell us, "There is no crime of which the disbeliever in another life is not capable."

Fifthly,—The last result which I detect, as a consequence of phrenological discoveries, is a remarkable assimilation between all the sciences, which could never be felt so long as the existence of a science called metaphysics was believed. Is it not henceforwards an established fact that observation presides as well over the moral as the physical world? It is the same operation of the intellect which discovers and fructifies all knowledge, merely directed here upon a different object.

Let us go farther, and confess that observation by the senses, which furnishes our phrenological truths, is the only warrant we possess that what we have gained in civilization will be preserved. If we ceased observing, or if man were submitted to any other species of observation than that employed by the phrenologists, metaphysics would necessarily recover all its lost power. Watch this science; it tends constantly to regain its ground, and employs in that object its personifications and its anathemas, so long prepared against every discovery in natural history. It has its vulgar and even sonorous phrases; its harmonious verses, addressing the ear in tones and measures, and inflaming the imagination. The metaphysicians, who style themselves sacred, attack you at once by the sentiments and instincts, with their melodious descriptions, their music and superstitious pomps; they surround you on all sides, while you have nothing to oppose against their numerous and powerful means of attack than simple observations, improved by the intelligence. Phrenologically speaking, this little group of organs, placed here, in the front of the brain, is attacked by the enormous masses which form the superior,

lateral, and posterior portions, and which are stimulated by this pretended science. Hence, if you neglect the method of observation, you remain without defence, and metaphysics drags you backwards towards the age of superstition and miracles. Already she exalts her passions, casts discord into the bosoms of families, and refuses the rights of sepulture to those who die in the belief of their reason and their conscience. She is ready to arm the guillotine, light the pile, and renew all the horrors of the middle ages. Profane metaphysicians are less dangerous, but they feel the necessity of permitting their *sacred* predecessors to run their course to a certain length, and prepare themselves, in the meantime, to profit by their errors, though certainly not in the way a naturalist or true observer would do. I repeat it again, Gentlemen. You have no security against the invasion of such persons except in correct observations with your senses, and correct inductions, drawn by your intelligence. The men who are really disposed favourably to advancement, but who are not phrenologists, are incapable of defending themselves, for they are thrown back on the "eighteenth century," —a theory which is far behind the actual of our knowledge, and destined to fall because its foundation was bad. The intentions of the followers of this sect were excellent; it made some precious discoveries with respect to the sensations, by following the path first traced out by ARISTOTLE, and demonstrated that all knowledge was derived through that source; but its progress was arrested in the middle of its march; it confounded knowledge with the instincts and sentiments, or considered the faculties as depending on a single principle, which presided over all the intellectual operations of man. The Scottish school was certainly the first to point out the sentiments; but phrenology alone was capable of distinguishing them from one another, and assigning them a place in the human brain.

This was an immense progress, of which the metaphysicians, who constantly denominate us "sensualists," can form no idea, and whose consequences they are unable to foresee. They affect to class us with the philosophers of the eighteenth century, with LOCKE, who gave the first impulse to the doctrine of sensations. These false philosophers never cease casting in our teeth the reproach, that we refer every thing to transfigured sensation,—an assertion which we combat as one that is disproved by observation and destructive of all scientific progress. The march of phrenology is quite different. After pointing out, in a correct manner, the part which the sensations play, and having distinguished them from the perceptions, it characterises the instincts and sentiments, and shows their connection with the perceptions,—an important fact, neglected by every philosophical sect which preceded us. It is this which gives such an incontestible superiority to phrenology, though the progressives refuse to comprehend it, calling us enemies to morality, fatalists, or the propagators of a chimera. Let them only study our science, and the veil will soon drop from their eyes. This is the only answer we can now make to their reproaches; but we think it right to warn them that they are highly interested in the progress of phrenology, for, as we said before, this science alone can protect them against the moral chaos which surrounds them on every side, under the specious titles of "pure morality;" "refined spiritualism;" which flatters itself with being the only efficacious preservative against the gross sensuality and vicious materialism of the empirical natural philosophers. Their aversion to phrenology is founded on some ridiculous sarcasms which issued from the court of NAPOLEON, who, on this point, assuredly, was no competent judge, although, perhaps, had he lived, he might at length have rendered justice to phrenology. The men of progress still act and reason under the influence of the witticisms of the journals and drawing-rooms of the empire, and never reflect how they lie at the mercy of their enemies, of those metaphysical ontologists who now lend them arguments which they will retort against themselves, whenever an opportunity arrives.

Such is the picture that I would lay before you of the state of the science. Before terminating my course, I thought it my duty to announce the conclusions which I draw from phrenology, which I have ventured naming "intellectual psychology," and which you will find in no work on the science, for all the phrenologists, without a single exception, have been more or less reserved in their communications. Uninfluenced by any other motive than a love of truth, I have spoken out all that I have thought without fear, and without hesitation.

My duty being thus fulfilled, it merely remains for me to testify the feelings which I enjoy on having completed my task. It is with the highest satisfaction that I have been able to bring this course to a conclusion. I began it with the hope of its being useful to you; I did not expect that it would have run to such a length; but the anxious desire you expressed of following these lectures, and the perseverance with which you laboured to overthrow the various and manifold obstacles thrown in the way of our reunions, could not fail to make an impression on me. I seized the first opportunity which leisure presented, and made it my duty to penetrate the details of phrenology,

and lay before you its connection with all that is most sublime in human knowledge. It is impossible for me, Gentlemen, to express how deeply I have been touched by the unwearied attention which you have paid to me, under the many inconveniences with which we were surrounded; but the pleasure we have felt in meeting each other, soon dissipated all these.

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